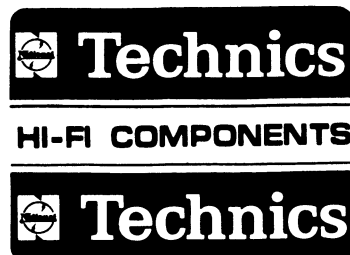


Service Manual



Stereo Integrated Amplifier



MODEL **SU-3150**

FM/AM Stereo Tuner



MODEL **ST-3150**

TECHNICAL SPECIFICATION (IHF) Model SU-3150

MAIN AMPLIFIER SECTIONS

Music Power:	80W (4 Ω), 60W (8 Ω)
1kHz continuous power:	
each channel driven	28W/28W(4 Ω)
both channels driven	23W/23W(8 Ω)
	22W+22W(4 Ω)
	20W+20W(8 Ω)
20Hz~20kHz continuous power:	
both channels driven	19W+19W(4 Ω)
	17W+17W(8 Ω)
Total harmonic distortion:	0.5%
Intermodulation distortion:	0.5%
Power bandwidth: (both channels driven at 8 Ω)	10 Hz~40 kHz -3 dB
Residual hum and noise:	0.5 mV
Damping factor:	30 (8 Ω)
Load impedance:	4~16 Ω
	8~16 Ω

PRE AMPLIFIER SECTION

Input sensitivity and impedance:	PHONO 1, 2	2mV/50k Ω
	TUNER, AUX	180mV/40k Ω
	TAPE DECK 1, 2 (PLAYBACK)	180mV/40k Ω
	TAPE DECK 1 REC/PLAY (Input)	180mV/40k Ω

PHONO 1, 2 maximum input voltage:

S/N:	PHONO 1, 2	120 mV
	TUNER, AUX	74 dB
		82 dB

Frequency response:

PHONO 1, 2	RIAA standard curve ± 0.5 dB
TUNER, AUX	7 Hz~90 kHz, +0 dB, -3 dB
BASS	50 Hz, +11 dB~-11 dB
TREBLE	10 kHz, +10 dB~-10 dB
LOW	40 Hz, -6 dB/oct
HIGH	8 kHz, -6 dB/oct
	100 Hz, +7 dB

Loudness control (volume at -30 dB):

Output voltage and impedance:	TAPE DECK 1, 2 (REC OUT)	180 mV/1 k Ω
	TAPE DECK 1 REC/PLAY (Output)	30 mV/80 k Ω

GENERAL

Power supply:	110/120/220/240 V
Power consumption:	190 W
Dimensions (W x H x D):	15 $\frac{1}{8}$ " x 4 $\frac{1}{2}$ " x 11 $\frac{1}{8}$ " (386 x 115 x 303) mm
Weight:	13.5 lb (6.1 kg)

TECHNICAL SPECIFICATIONS (IHF) Model ST-3150

FM TUNER SECTION

Frequency range:	88~108 MHz
Antenna terminals:	300 Ω (balanced)
	75 Ω (unbalanced)
Sensitivity:	1.8 μ V
Total harmonic distortion (400Hz, 100% modulation):	
MONO	0.2%
STEREO	0.4%
S/N:	75 dB
Frequency response:	20 Hz~15 kHz +0.2 dB
Alternate channel selectivity:	70 dB
Capture ratio:	1.0 dB
Image rejection (at 98 MHz):	55 dB
IF rejection (at 98 MHz):	80 dB
Spurious response rejection (at 98 MHz):	85 dB
AM suppression:	50 dB
Stereo separation:	45 dB at 1 kHz 35 dB at 10 kHz
Leak carrier (19 kHz, 38 kHz):	60 dB

AM TUNER SECTION

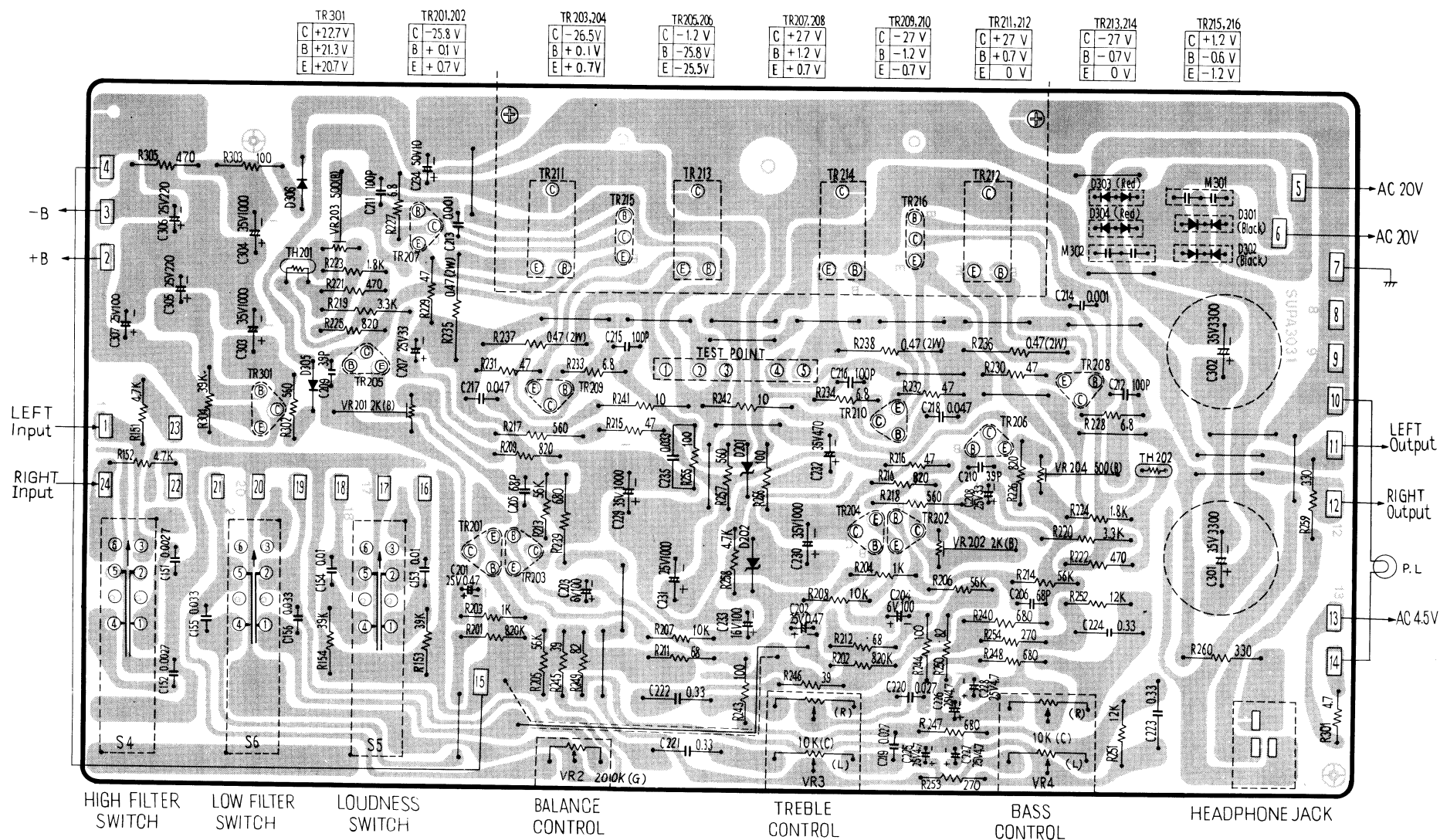
Frequency range:	520~1610 kHz
Sensitivity:	25 μ V
Selectivity:	25 dB
Image rejection (at 1000 kHz):	45 dB
IF rejection (at 1000 kHz):	40 dB

GENERAL

Output voltage:	0.7 V
Power supply:	50/60 Hz 110/120/220/240 V
Power consumption:	9 W
Dimensions (W x H x D):	15 $\frac{1}{8}$ " x 4 $\frac{1}{2}$ " x 12 $\frac{1}{8}$ " (386 x 115 x 313) mm
Weight:	10.8 lb (4.9 kg)

Matsushita Electric
Matsushita Electric Trading Co., Ltd.
P. O. Box 288, Central Osaka, Japan

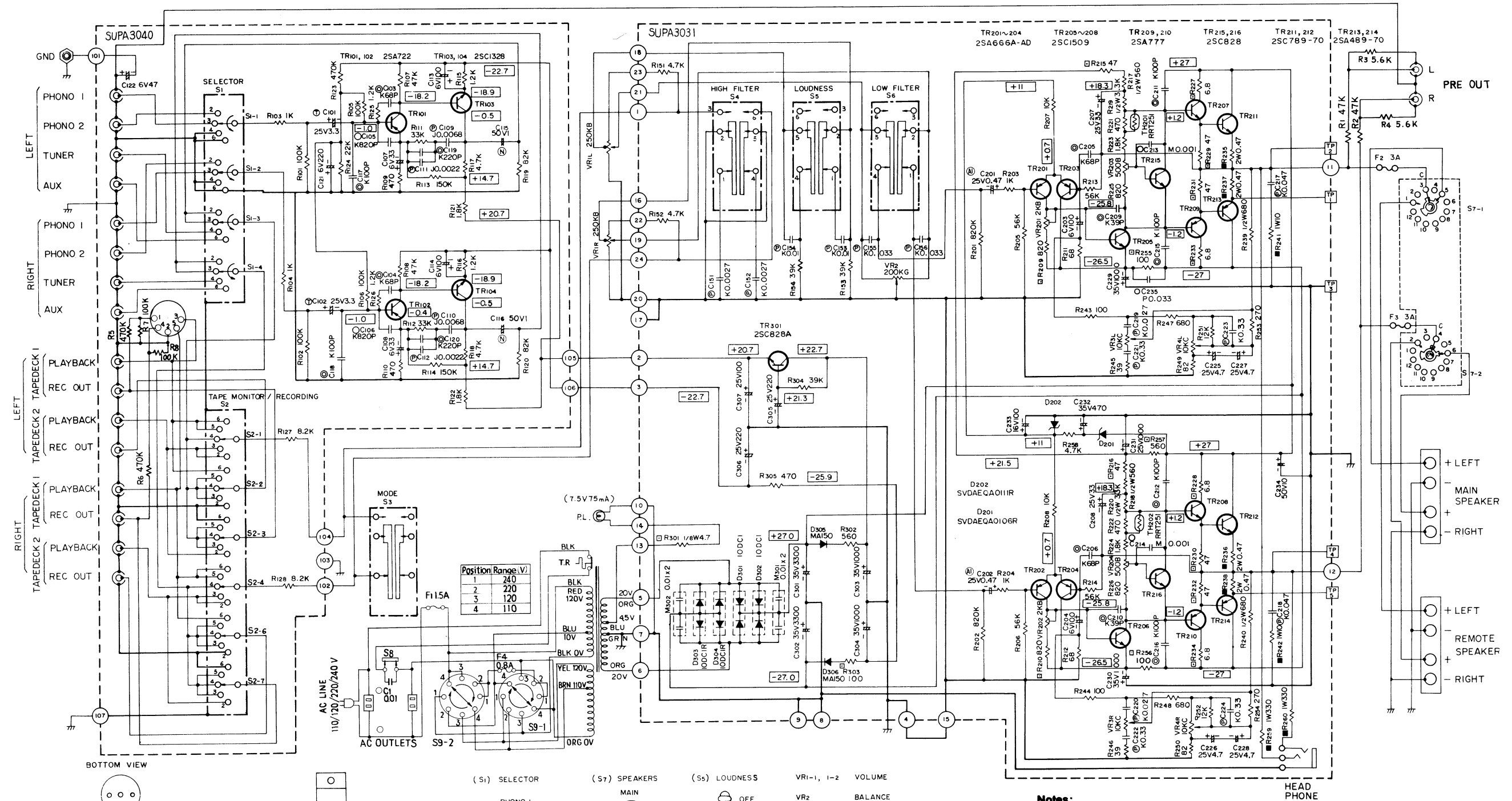
POWER SOURCE & PRE-MAIN AMPLIFIER CIRCUIT BOARD



Schematic Diagram.....

Model SU-3150

(This schematic diagram may be modified at any time with the development of new technology.)



TR101, 102 2SA722
TR103, 104 2SC1328
TR201, 202, 203, 204 2SA666A-AD
TR205, 206, 207, 208 2SC1509
TR209, 210 2SA777
TR215, 216 2SC828
TR301 2SC828A

D201 SVDAEQAO106R
D202 SVDAEQAO111R

TR211, 212 2SC789-70
TR213, 214 2SA489-70

D301, 302 RVD10DC I
D303, 304 RVD10DC IR

(S1) SELECTOR
PHONO 1
PHONO 2
TUNER
AUX

(S2) TAPE MONITOR/DUBBING
SOURCE
TAPE 1
TAPE 2
TAPE 1-2
TAPE 2-1

(S7) SPEAKERS
MAIN
OFF
REMOTE
MAIN+REMOTE

(S5) LOUDNESS
OFF
ON

(S3) MODE
STEREO
MONO

(S6) LOW FILTER
OFF
ON

(S4) HIGH FILTER (S8) POWER
OFF
ON

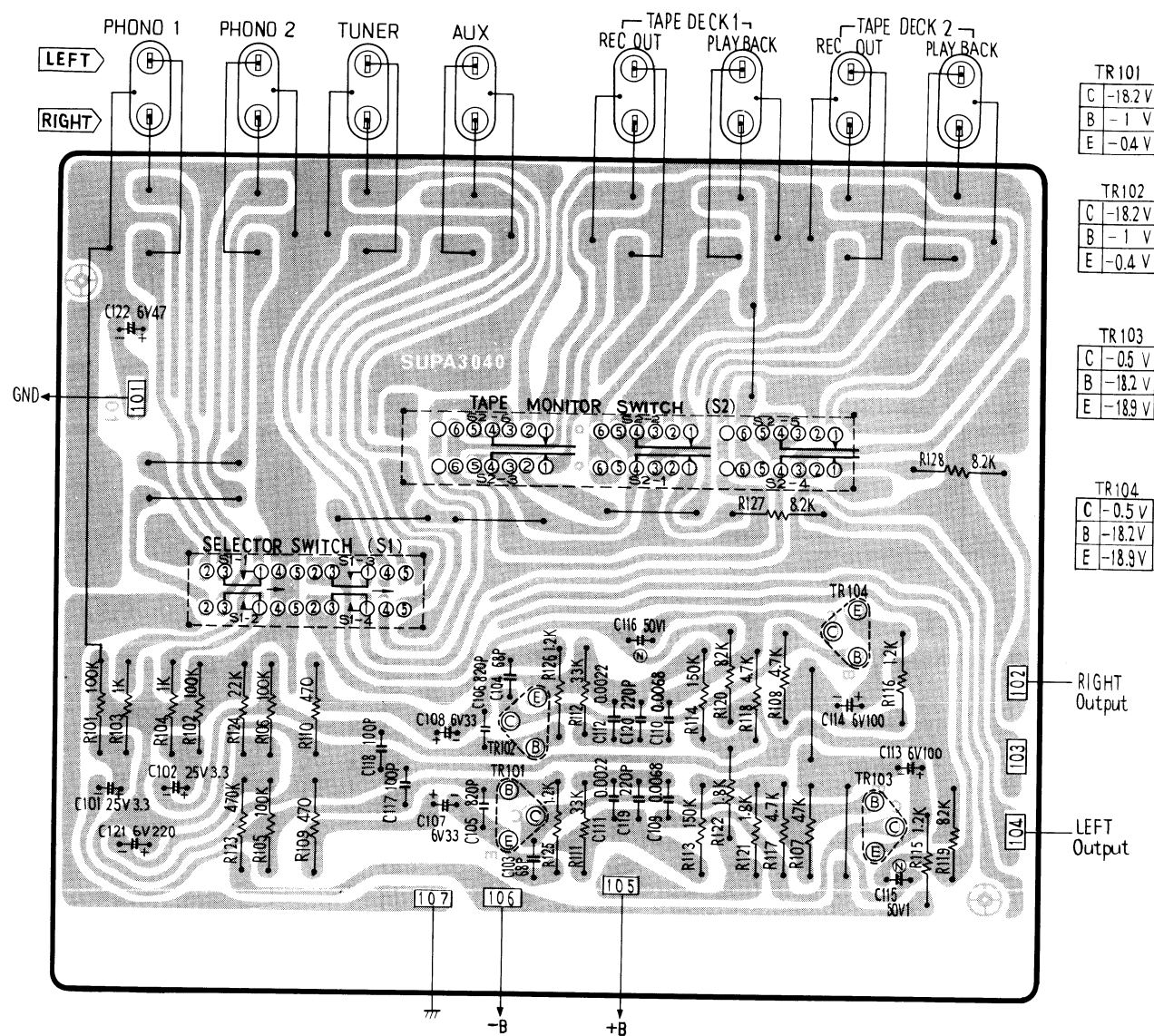
VR1-1, -2 VOLUME
VR2 BALANCE
VR3L, 3R TREBLE
VR4L, 4R BASS

Notes:

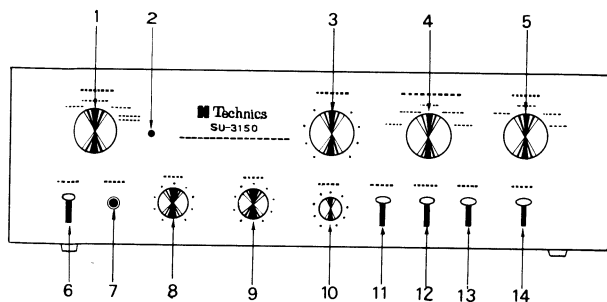
- S1-1~S1-4: Selector switch in "PHONO 1" position.
PHONO 2 ↔ PHONO 1 ↔ TUNER ↔ AUX.
- S2-1 ~ S2-6: Tape monitor and tape dubbing switch in "SOURCE" position.
TAPE 1 ▶ 2 ↔ TAPE 1 ↔ SOURCE ↔ TAPE 2 ↔ TAPE 2 ▶ 1
- S3: Mode switch in "STEREO" position.
- S4: High filter switch in "OFF" position.
- S5: Loudness switch in "OFF" position.
- S6: Low filter switch in "OFF" position.
- S7-1, S7-2: Speakers selector switch in "MAIN" position.
OFF ↔ MAIN ↔ REMOTE ↔ MAIN+REMOTE.
- S8: Power source switch in "ON" position.
- S9-1, S9-2: Voltage selector switch in "110 V" position.
(4) 110 V ↔ (3) 120 V ↔ (2) 220 V ↔ (1) 240 V

DC voltage measurements are taken with DC VTVM from chassis ground.

Model SU-3150 **EQUALIZER, TAPE MONITOR & SELECTOR SWITCH**
CIRCUIT BOARD

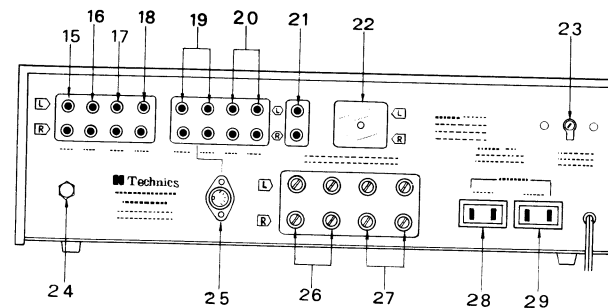


Model SU-3150 **LOCATION OF CONTROLS**



1. SPEAKER SELECTOR SWITCH (S7)
2. POWER INDICATOR
3. VOLUME CONTROL
4. TAPE MONITOR/DUBBING SWITCH (S2)
5. SELECTOR SWITCH (S1)
6. POWER SOURCE SWITCH (S8)
7. HEADPHONES JACK
8. BASS CONTROL
9. TREBLE CONTROL
10. BALANCE CONTROL
11. LOUDNESS SWITCH (S5)
12. LOW FILTER SWITCH (S6)
13. HIGH FILTER SWITCH (S4)
14. MODE SWITCH (S3)

Model SU-3150 **LOCATION OF CONTROLS**

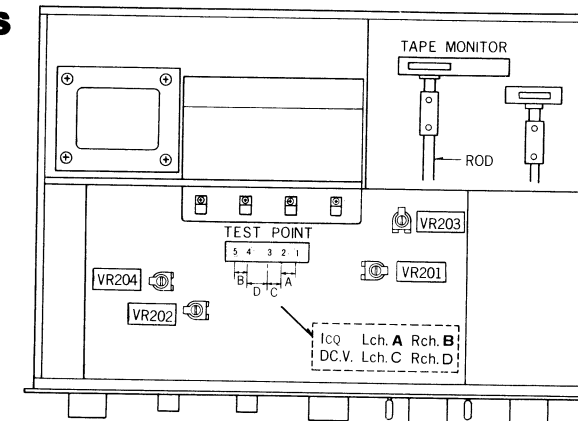


15. PHONO 1 INPUT TERMINALS
16. PHONO 2 INPUT TERMINALS
17. TUNER INPUT TERMINALS
18. AUX INPUT TERMINALS
19. TAPE DECK 1 CONNECTION TERMINALS
20. TAPE DECK 2 CONNECTION TERMINALS
21. PRE OUTPUT TERMINALS
22. CIRCUIT PROTECTION FUSES
23. VOLTAGE SELECTOR SWITCH (Not attach for Australia) (S9)
24. GROUND TERMINAL
25. TAPE DECK 1 DIN SOCKET
26. MAIN SPEAKER TERMINALS
27. REMOTE SPEAKER TERMINALS
28. AC OUTLET.....Switched (Not attach for Australia)
29. AC OUTLET.....Unswitched (Not attach for Australia)

Model SU-3150 **ALIGNMENT INSTRUCTIONS**

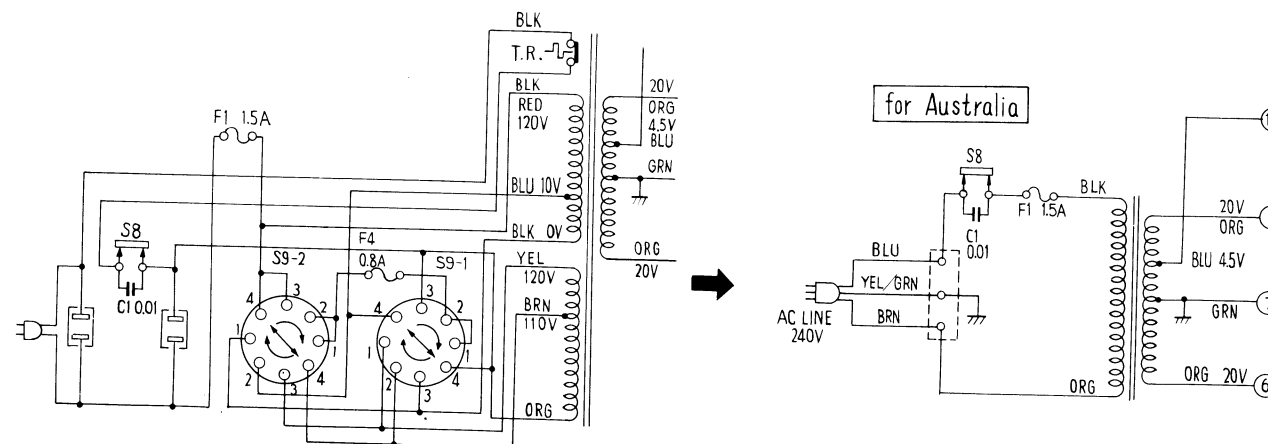
Notes:

1. Volume control to minimum.
2. Maintain line voltage at rated voltage.
3. The Icq adjustment should be started about 3 minutes after setting the power switch to the "ON" position.



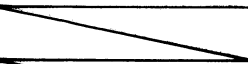
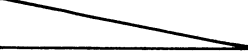
ALIGNMENT	DC VTVM CONNECTION	ADJUSTMENT POINTS	REMARKS
DC UNBALANCE	Left ch. Connect DC VTVM between testpoint No. ② and No. ③ terminals.	VR 201	Make sure that DC VTVM becomes zero (0) V.
	Right ch.....Connect DC VTVM between test point No. ③ and No. ④ terminals.	VR 202	
Icq	Left ch. Connect DC VTVM between test point No. ① (-) and No. ② (+) terminals.	VR 303	Make adjustments so that the indication on DC VTVM becomes 8 mV.
	Right ch.....Connect DC VTVM between test point No. ④ (+) and No. ⑤ (-) terminals.	VR 304	

Model SU-3150 (for Australia) **SCHEMATIC DIAGRAM.....Power Supply**



Notes:

1. Muting switch OFF
2. MPX high blend switch OFF
3. Band selector switch AM, FM AUTO (FM-RF, FM-IF)
4. Maintain line voltage at rated voltage.
5. Output of signal generator should be no higher than necessary to obtain an output reading.

SIGNAL GENERATOR or SWEEP GENERATOR		DIAL SETTING	INDICATOR (VTVM or SCOPE) (DISTORTION METER)	ADJUSTMENT POINTS	REMARKS
CONNECTION	FREQUENCY	[DISTANCE]			
AM ALIGNMENT					
1	High side through 0.001 μ F to TP2 . Common to chassis.	455kHz (Set for Ingrand to 470 kHz)	Point of non- inter-ferece	Connect vertical amplifier of scope to TP201 .	T202 (1st IFT) T203 (2nd IFT) Adjust for maximum output.
2	Fashion loop of several turns of wire and radiate signal into loop of tuner.	550kHz (30% Mod. with 400Hz)	550kHz [8.1mm]	Connect VTVM or scope to output terminal of set.	T201 (OSC Coil) L201 (ANT Coil) Adjust for maximum output. Adjust ferrite core of L201 by screw driver.
3	Fashion loop of several turns of wire and radiate signal into loop of tuner.	1500kHz (30% Mod. with 400Hz)	1500kHz [191.4mm]	Connect VTVM or scope to output terminal of set.	CT202 (OSC Trimmer) CT201 (ANT Trimmer) Adjust for maximum output Repeat steps (2) and (3).
FM-IF ALIGNMENT					
4		No Signal	Point of non- inter-ferece	Connect vertical amplifier of scope to output terminal of set.	T101 (DISCRI IFT)(P) Brown Core Adjust for maximum noise level.
5		No Signal	Point of non- inter-ferece	Connect vertical amplifier of scope to output terminal of set.	T101 (DISCRI IFT)(S) Green Core Adjust for center of tuning meter indication.
FM-RF ALIGNMENT					
6	Connect to FM antenna terminal through FM dummy antenna.	90MHz (100% Mod. with 400Hz)	90MHz [24 mm]	Connect VTVM or scope to output terminal of set.	L6 (OSC Coil) L4 (DET Coil) L2 (ANT Coil) Adjust for maximun output.
7	Connect to FM antenna terminal through FM dummy antenna.	106MHz (100% Mod. with 400Hz)	106MHz [153 mm]	Connect VTVM or scope to output terminal of set.	CT3 (OSC Trimmer) CT2 (DET Trimmer) CT1 (ANT Trimmer) Adjust for maximum output. Repeat steps (6) and (7).
FM MONO DISTORTION ALIGNMENT					
8	Connect to FM antenna terminal through FM dummy antenna	98MHz (100% Mod. with 400Hz)	98MHz	Connect distortion meter to output terminal of set.	T101 (DISCRI IFT)(P) Brown Core Adjust for minimum of distortion meter indica- tion
SIGNAL METER ALIGNMENT					
9	Connect to FM antenna terminal through FM dummy antenna. Output level of SG...32 dB (IHF)	98MHz (30% Mod. with 400Hz)	98MHz	Signal meter of set.	T102 (Meter IFT) Adjust for maximum of signal meter indication.
10	Output level of S.G. 72dB (IHF)			Signal meter of set.	VR102 Adjust for 4.8~5 point of signal meter indication.
MUTING LEVEL ALIGNMENT					
Note: Muting switch to ON.					
11	Connect to FM antenna terminal through FM dummy antenna.	98MHz (100% Mod. with 400Hz)	98MHz	Connect DC VTVM between TP101 and TP3.	T103 Adjust for maximum of DC VTVM indication.
12	Output level of S.G. 32 dB (IHF)			Connect VTVM or scope to output terminal of set.	VR101 Adjust so that output can be obtained.

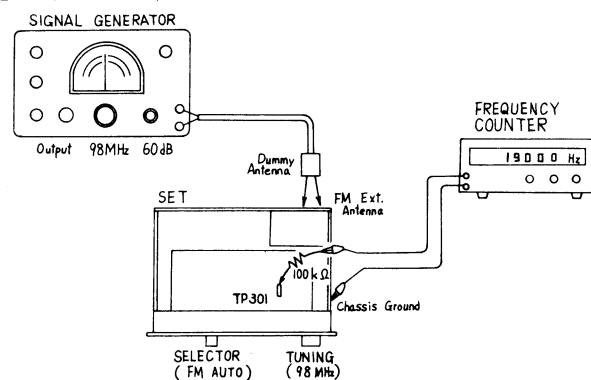
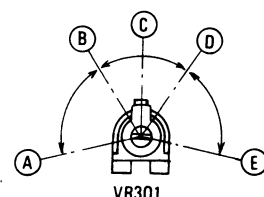


Fig. 1



- A~B, D~E: Stereo OFF Position.
B~D: Stereo ON Position (Indicator Lighting)
C: Adjust Point of Pilot Circuit.

Fig. 2

FM MPX PILOT ALIGNMENT

When use the frequency counter	When not use the frequency counter
① 98MHz Non-modulation mono signal applied to set. ② Muting switch to ON. ③ Connect the frequency counter as shown fig. 1. ④ Adjust VR301 to 19kHz $\pm$ 100Hz.	① Stereo signal applied to set or receive the stereo station. ② Adjust VR301 to lighting point of stereo indicator and sement contactor of VR301 as shown fig. 2.

STEREO SEPARATION ALIGNMENT

- Note: 1. Stereo modulator Connect stereo modulator output to EXT. MOD. terminal of signal generator.
Internal OSC 1 kHz. Pilot signal modulation 10%
2. Signal generator Frequency approximately 98MHz. Output level 72dB (IHF). Modulation mode to FM.
3. Band selector switch FM AUTO

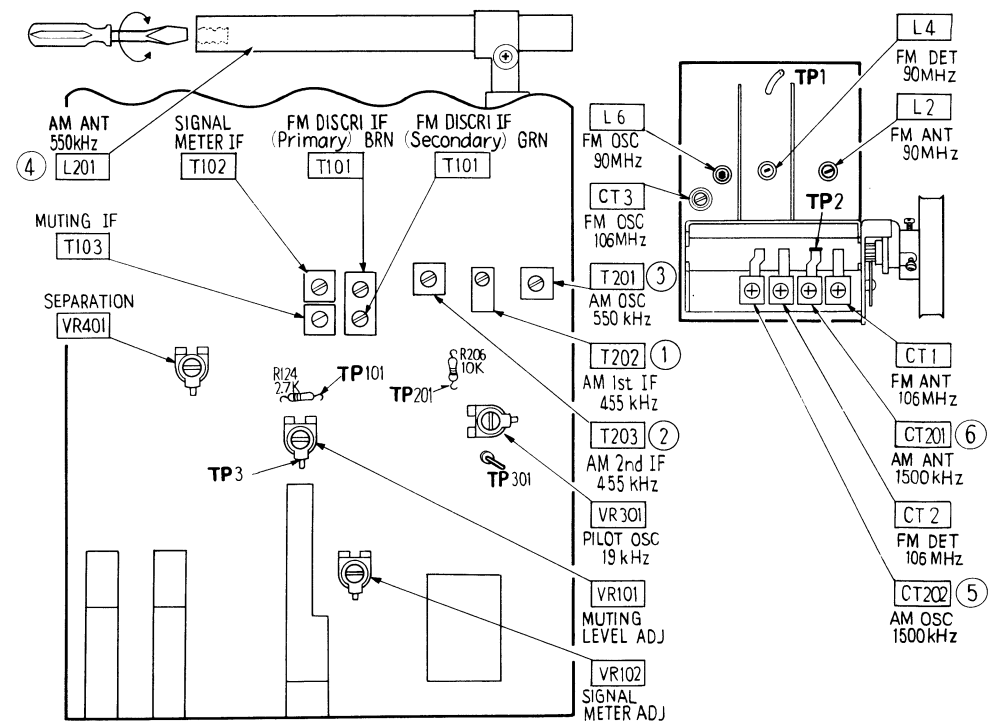
SIGNAL GENERATOR CONNECTION	STEREO MODULATOR MODE and MOD. RATE	INDICATOR (VTVM or SCOPE)	ADJUSTMENT POINTS	REMARKS
FM antenna terminal through dummy antenna.	L (and R) 30% Modulation	Connect VTVM or scope to output terminals through low pass filter.	VR401	Adjust for minimum right (and left) output.

FM-RF ALIGNMENT INSTRUCTIONS Only set for Germany

ABGLEICHANWEISUNGEN.....VOR DEM ABGLEICH SORGFÄLTIG DURCHLESEN

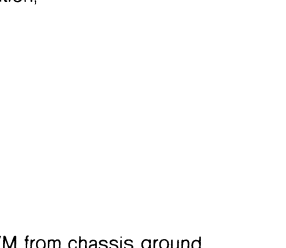
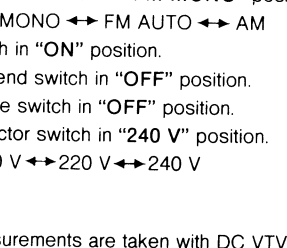
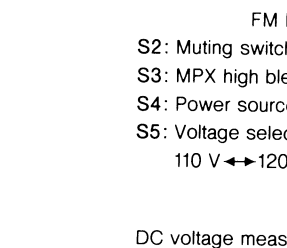
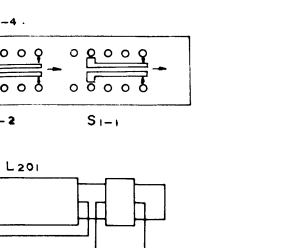
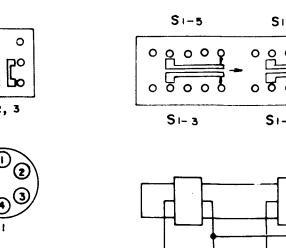
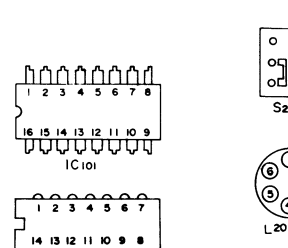
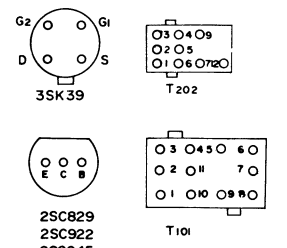
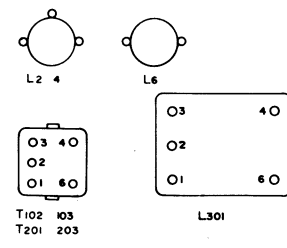
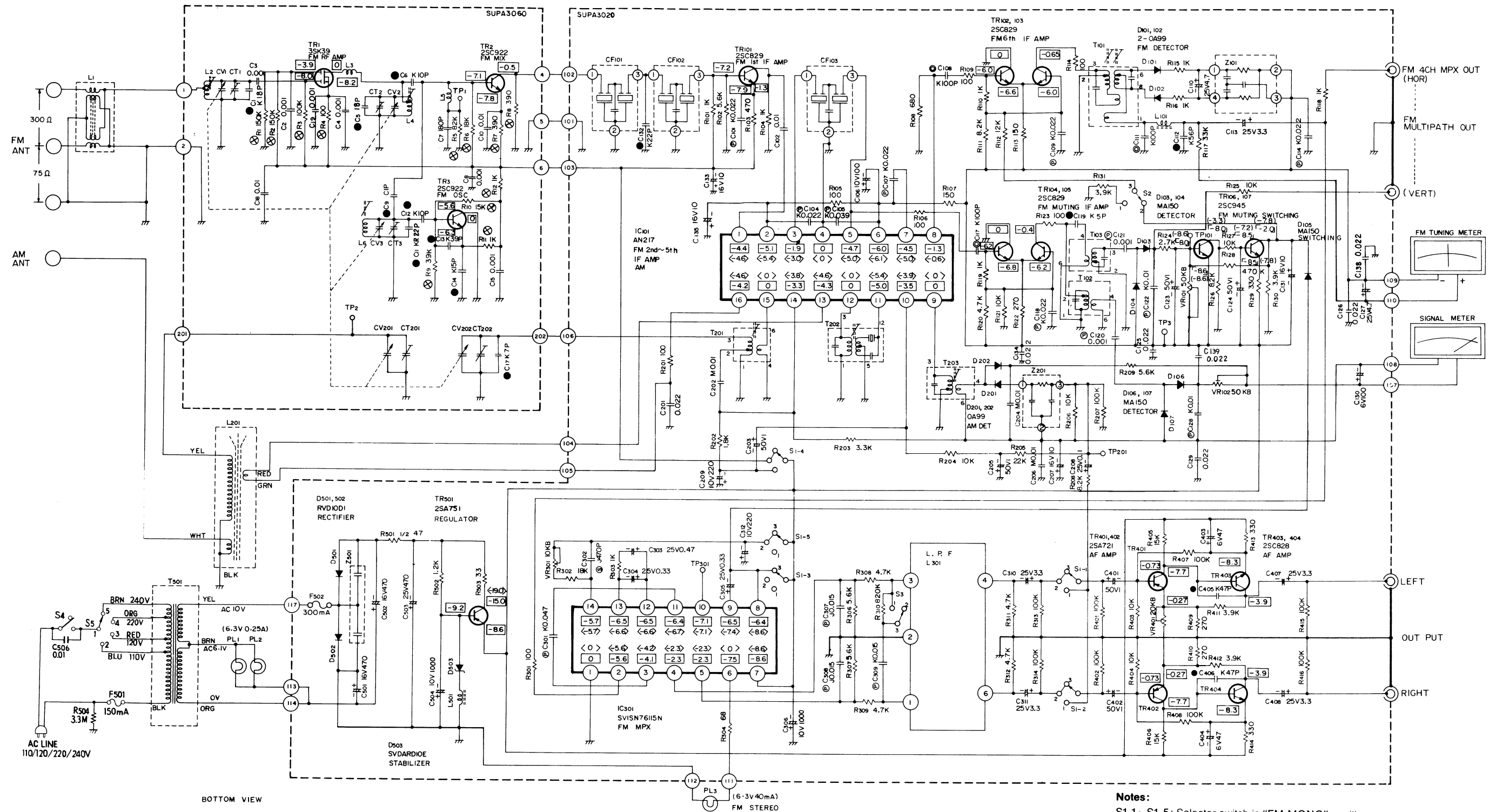
MESSENDER		SKALENZEIGER-EINSTELLUNG DES EMPFÄNGERS [ABSTAND]	ANGEIGE (RÖHRENVOLTMETER ODER OSZILLOGRAPH)	ABGLEICH	BEMERKUNGEN
SCHALTUNG	FREQUENZ				
FM HF-ABGLEICH					
Anschluß an den FM Antennenanschluß über die künstliche FM Antenne	87.5MHz (100% Mod. bei 400Hz)	87.5MHz { 0mm }	Output meter über Lautsprecher- schwingspule anschließen.	L 6 (Oszillatorspule)	Auf max. Ausgang abgleichen
“	90MHz (“)	90MHz	“	L 4 (Zwischenkreis) L 2 (Antennenspule)	“
“	106MHz (“)	106MHz { 153 mm }	“	CT 3 (OSZ. Trimmer) CT 2 (DET. Trimmer) CT 1 (ANT. Trimmer)	“

ALIGNMENT POINTS



Schematic Diagram..... Model ST-3150

(This schematic diagram may be modified at any time with the development of new technology.)



- Notes:**
- S1-1~S1-5: Selector switch in "FM MONO" position, FM MONO ↔ FM AUTO ↔ AM
 - S2: Muting switch in "ON" position.
 - S3: MPX high blend switch in "OFF" position.
 - S4: Power source switch in "OFF" position.
 - S5: Voltage selector switch in "240 V" position. 110 V ↔ 120 V ↔ 220 V ↔ 240 V

DC voltage measurements are taken with DC VTVM from chassis ground.

.....FM stereo signal reception.

< > FM mono signal or AM signal reception.

() Muting switch to "OFF" position.

┌ ┐ Muting switch to "ON" position.

⊗ Mark resistors are printed carbon resistor.

Model ST-3150

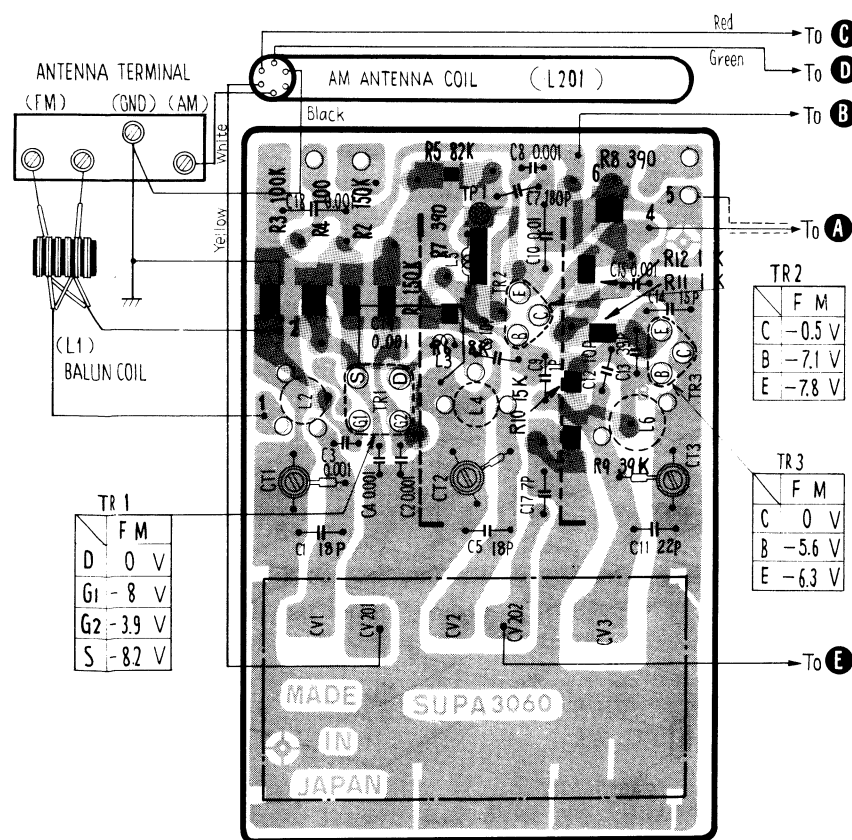
AM/FM-IF, MPX &
POWER SOURCE CIRCUIT BOARD (→)

Model ST-3150

FM-RF CIRCUIT BOARD (↓)

Printed Carbon Resistor

Circuit View on Top of P.C.B.



TR103	
FM	
C	-0.65 V
B	-6 V
E	-6.6 V

TR104	
FM	
C	0 V
B	-6.2 V
E	-6.8 V

TR105	
FM	
C	-0.4 V
B	-6.2 V
E	-6.8 V

TR101	
FM	
C	-1.3 V
B	-7.2 V
E	-7.9 V

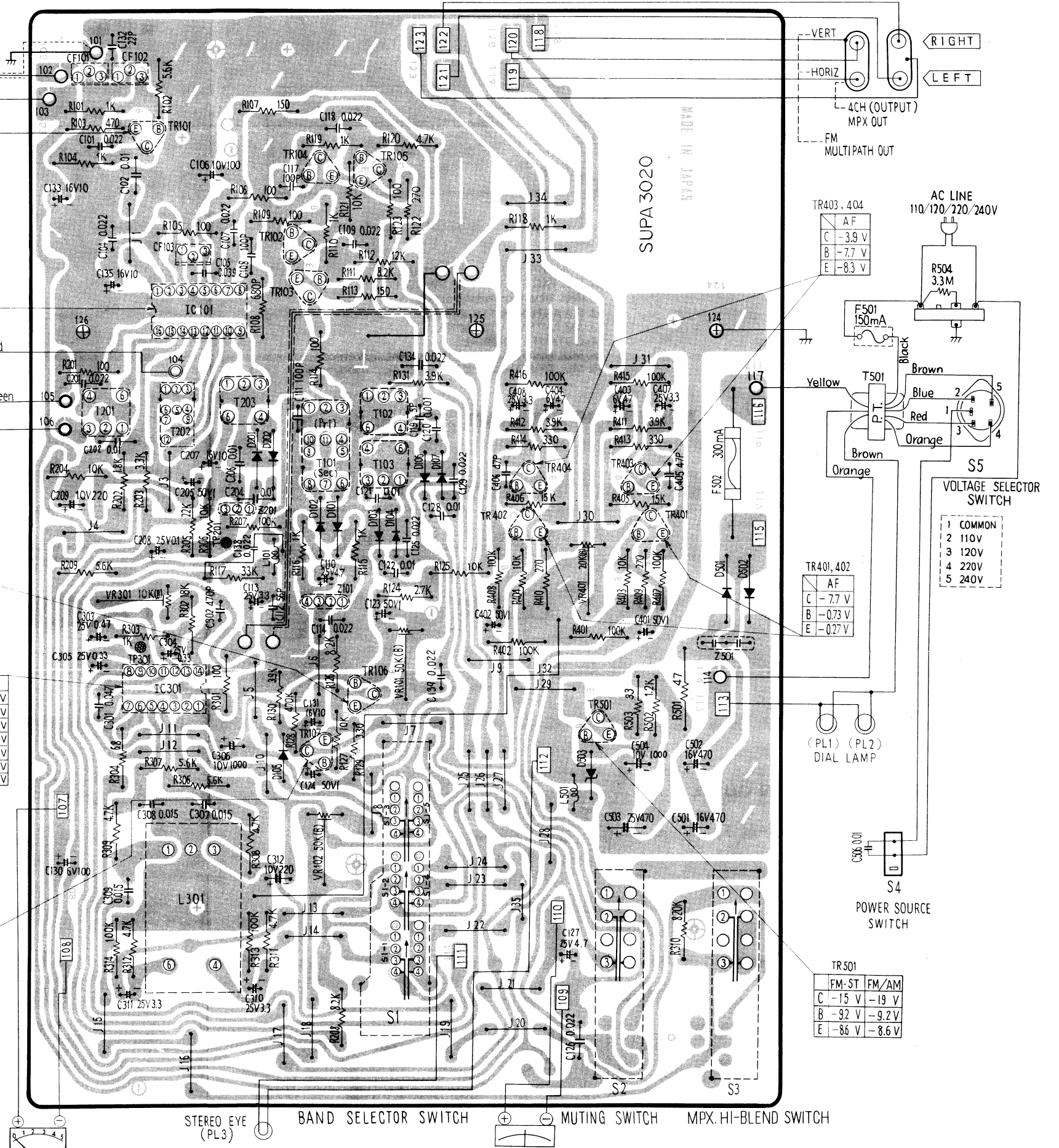
TR102	
FM	
C	0 V
B	-6 V
E	-6.6 V

IC 101	
1	FM -4.4 V -4.8 V
2	FM -5.1 V -5.4 V
3	FM -1.9 V -3 V
4	FM 0 V 0 V
5	FM -4.7 V -5 V
6	FM -6 V -6.1 V
7	FM -4.5 V -5 V
8	FM -1.3 V -0.6 V
9	FM 0 V 0 V
10	FM -3.5 V -3.9 V
11	FM -5 V -5.4 V
12	FM 0 V 0 V
13	FM -4.3 V -4.6 V
14	FM -3.3 V -3.8 V
15	FM 0 V 0 V
16	FM -4.7 V -4.6 V

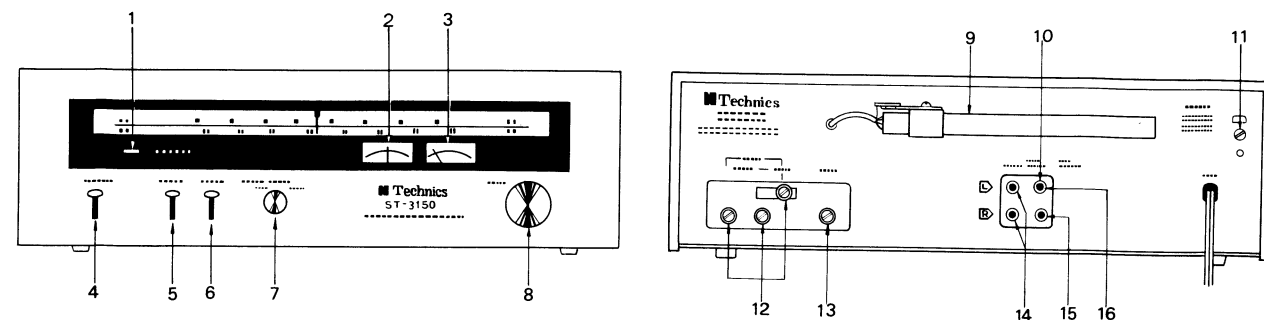
TR106	
MUTING OFF	
C	-3.3 V -8 V
B	-8.6 V -8 V
E	-8.6 V -8.6 V

IC 301	
1	FM-ST MONO 0 V 0 V 8 -6.4 V -8.6 V
2	FM-ST MONO -5.6 V -5.6 V 9 -6.5 V -7.4 V
3	FM-ST MONO -4.1 V -4.2 V 10 -7.1 V -7.1 V
4	FM-ST MONO -2.3 V -2.3 V 11 -6.4 V -6.7 V
5	FM-ST MONO -2.3 V -2.3 V 12 -6.5 V -6.6 V
6	FM-ST MONO -7.5 V -0 V 13 -6.5 V -6.6 V
7	FM-ST MONO -8.6 V -8.6 V 14 -5.7 V -5.7 V

TR107	
MUTING OFF	
C	-7.8 V -2 V
B	-7.2 V -8.5 V
E	-7.8 V -8.5 V



Model ST-3150 LOCATION OF CONTROLS

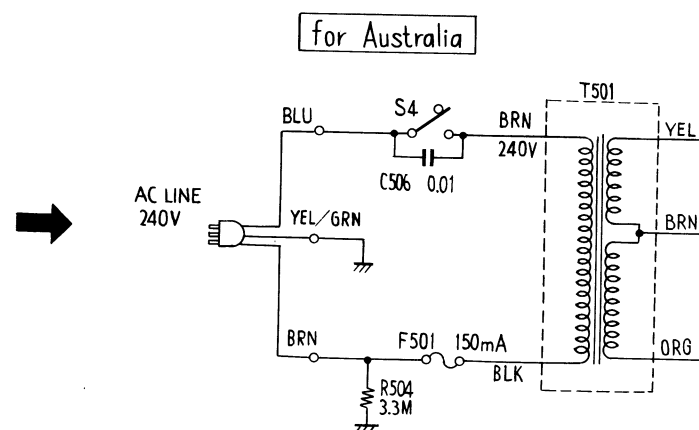
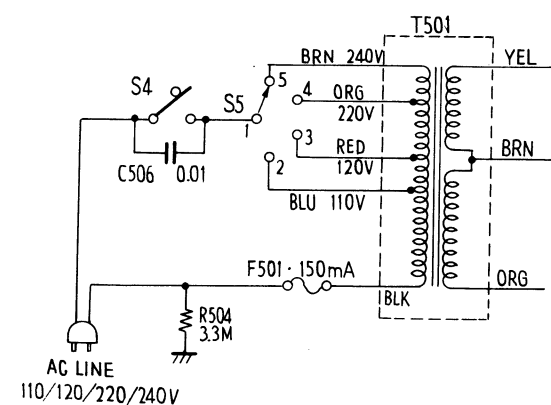


1. FM STEREO INDICATOR
2. FM TUNING METER
3. SIGNAL STRENGTH METER
4. POWER SOURCE SWITCH (S4)
5. MPX HI-BLEND SWITCH (S3)
6. MUTING SWITCH (S2)
7. BAND SELECTOR SWITCH (S1)
8. TUNING CONTROL
9. AM FERRITE CORE ANTENNA

10. 4CH MPX OUTPUT TERMINAL
11. VOLTAGE SELECTOR SWITCH (Not attach for Australia) (S5)
12. FM ANTENNA TERMINALS
13. AM ANTENNA TERMINAL
14. OUTPUT TERMINAL
15. MULTIPATH OUTPUT TERMINAL.....Vertical
16. MULTIPATH OUTPUT TERMINAL.....Horizontal

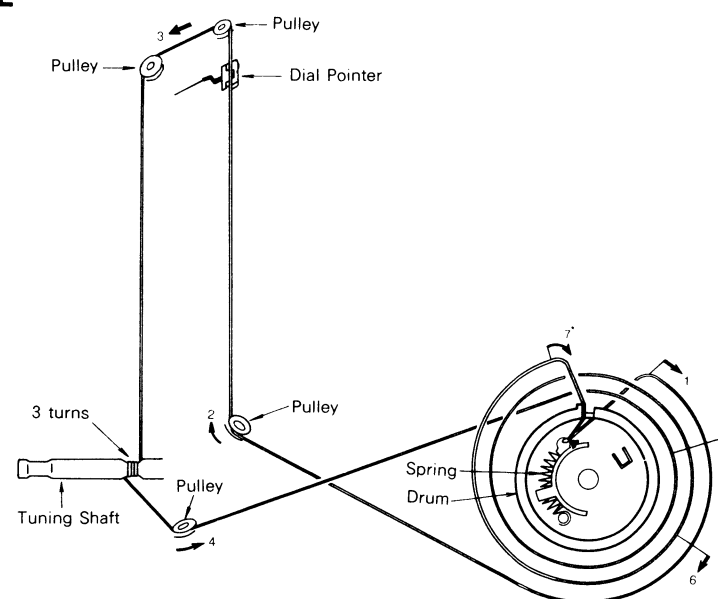
Model ST-3150 (for Australia)

SCHEMATIC DIAGRAM.....Power Supply



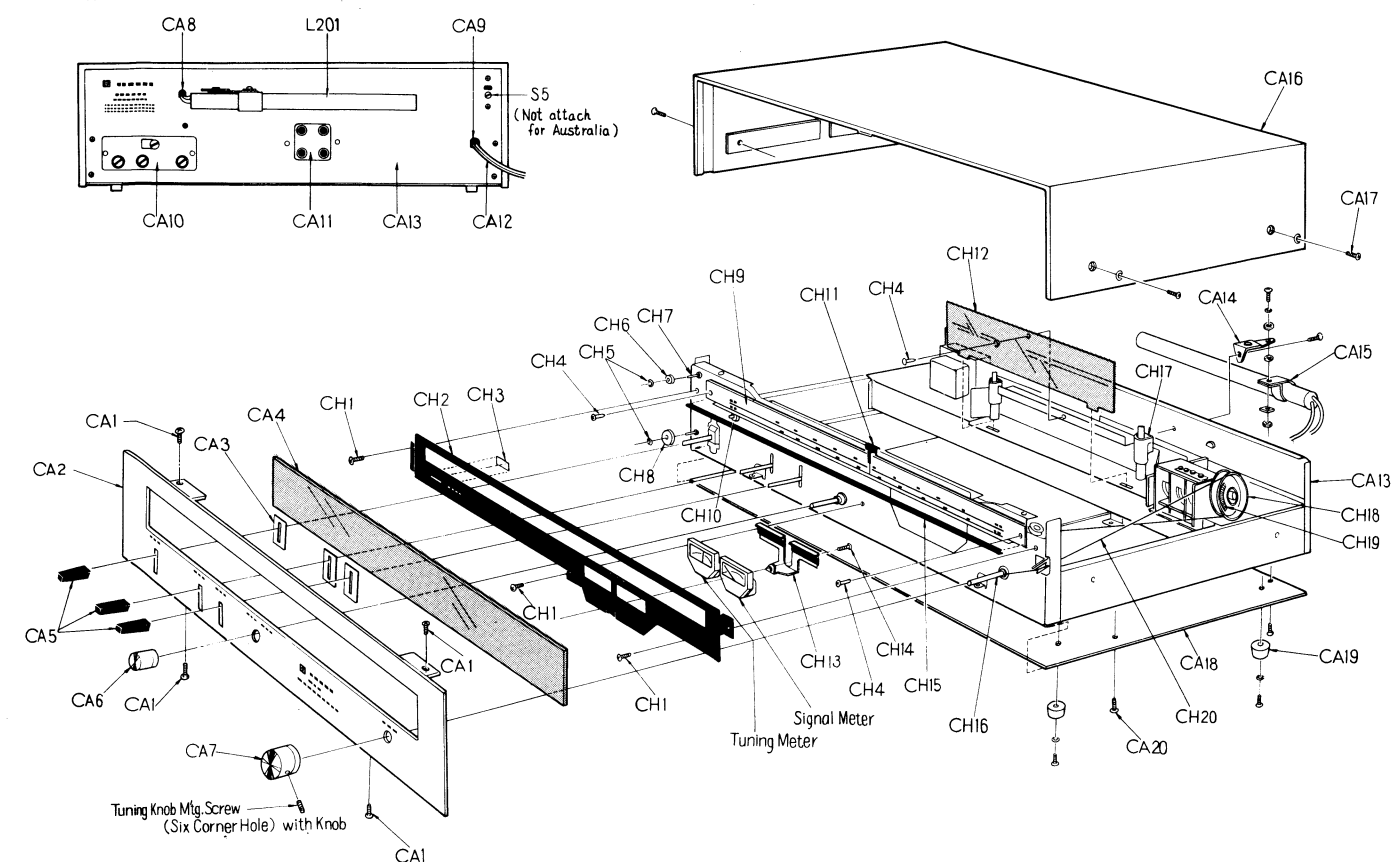
DIAL CORD INSTALLATION GUIDE

1. Dial cord length is 190 cm (74 11/16")
2. Tuning gang is positioned at maximum capacity.
(Frequency is minimum)
3. Arrow marks (1~7) indicate correct order and direction of stringing dial cord.

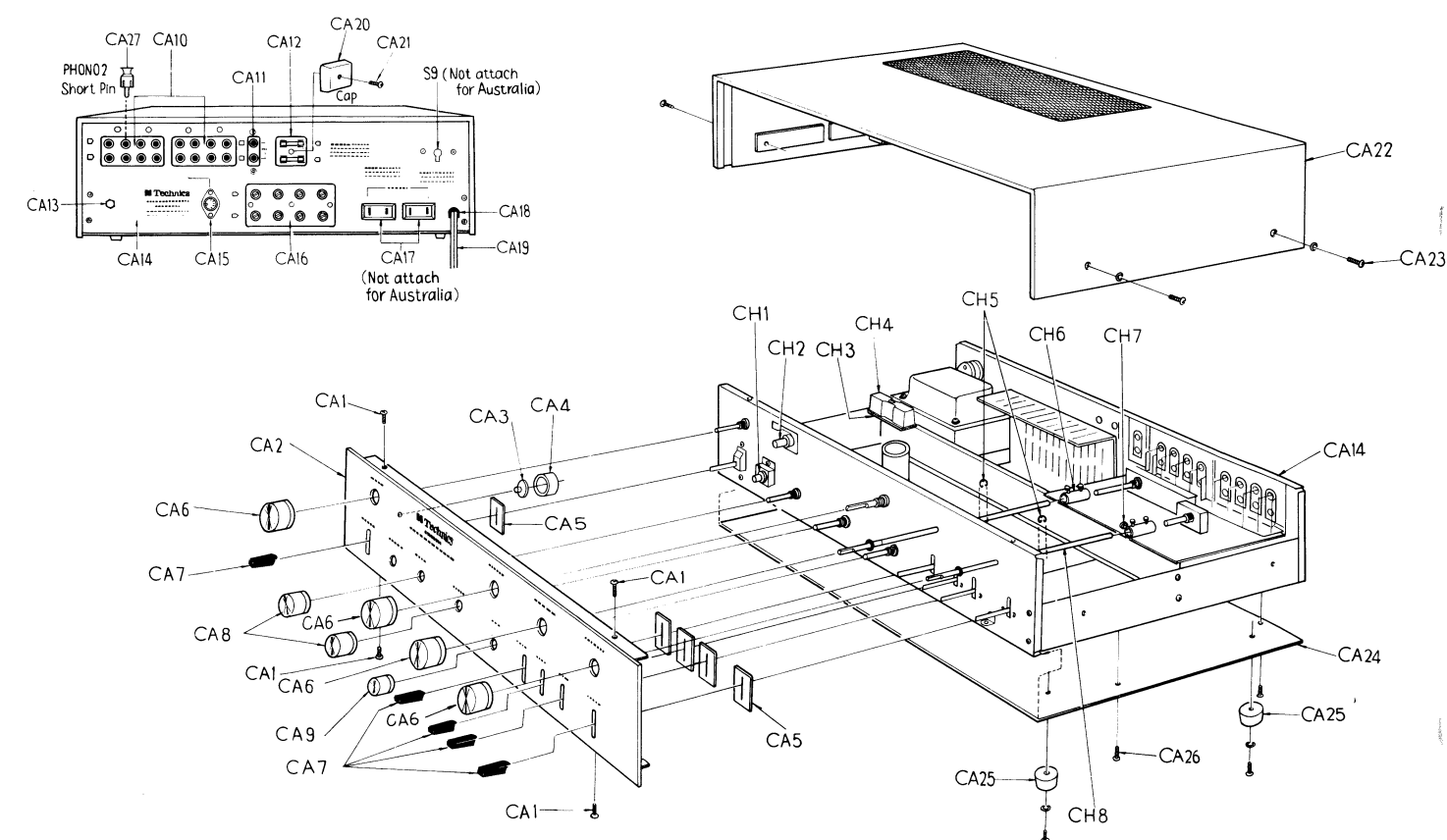


ST-3150 13

Model ST-3150 CABINET & CHASSIS PARTS LOCATION



Model SU-3150 CABINET & CHASSIS PARTS LOCATION



14 SU-3150 ST-3150

Model ST-3150

REPLACEMENT PARTS LIST

NOTES:

1. Part numbers are indicated on most mechanical parts. Please use this part number, for parts orders.
2. N indicates the New Parts.
3. X-Z rank: X rank parts will cover 80% of repair needs. X + Y rank parts will cover 95% of repair needs. Z rank parts are less necessary.

Bemerkungen:

1. Die meisten mechanischen Teile sind mit Teilnummern versehen. Bitte geben Sie diese Nummern an, sofern die Teile keine Bezugsnummern haben.
2. N bedeutet: Neue Teile.
3. Gruppen X-Z: Teile der Gruppe X machen 80% des Ersatzteilbedarfes aus. Teile der Gruppen X und Y machen 95% des Ersatzteilbedarfes aus. Teile der Gruppe Z werden seltener benötigt.

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks	Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
INTEGRATED CIRCUITS					R117	ERD14TJ333	33kΩ, 1/4W, ±5%, Carbon	1	Y
IC101	AN217BB	FM IF Amplifier	1	X	R207, 313, 314, 401, 402, 407, 408, 415, 416	ERD14TJ104	100kΩ, 1/4W, ±5%, Carbon	9	Y
IC301	SVISN76115N	FM MPX Circuit	1	X	R128	ERD14TJ474	470kΩ, 1/4W, ±5%, Carbon	1	Y
TRANSISTORS					R310	ERD14TJ824	820kΩ, 1/4W, ±5%, Carbon	1	Y
TR1	3SK39Q	FM RF Amplifier	1	X	R503	ERD12TJ330	33Ω, 1/2W, ±5%, Carbon	1	Y
TR2, 3	2SC922M	FM MIX & OSC	2	X	R501	ERD12TJ470	47Ω, 1/2W, ±5%, Carbon	1	Y
TR101, 102, 103, 104, 105	2SC829C	FM IF, Muting IF Amplifier	5	X	R504	ERC12ZGK335	3.3MΩ, 1/2W, ±10%, Solid	1	Y
TR106, 107	2SC945P2	Muting Switching	2	X	VARIABLE RESISTORS				
TR401, 402	2SA721T	AF Amplifier	2	X	VR101, 102	EVLS3AA00B54	50kΩ (B), Muting & Meter Adjustment	1	Y
TR403, 404	2SC828R	AF Amplifier	2	X	VR301	EVLS3AA00B14	10kΩ (B), VCO Adjustment	1	Y
TR501	2SA751R	Regulator	1	X	VR401	EVLS3AA00B24	20kΩ (B), Separation Adjustment	1	Y
DIODES					CAPACITORS				
D101, 102	2-0A99	FM Discriminator	1 pair	X	C2, 3, 4, 8, 15, 19	ECKD1H102PF	0.001μF, 50WV, ±100%, Ceramic	6	Z
D103, 104, 105, 106, 107	MA150	Muting & Meter Detector	5	X	C10, 18, 102	ECKE1H103PF	0.01μF, 50WV, ±100%, Ceramic	3	Z
D201, 202	0A99	AM Detector	2	X	C202, 204, 206	ECKE1H103MD	0.01μF, 50WV, ±20%, Ceramic	3	Z
D501, 502	RVD10D1	Rectifier	2	X	C138, 125, 126, 129, 134, 201	ECKE1H223PF	0.022μF, 50WV, ±100%, Ceramic	6	Z
D503	SVDARD10E	10V Zener	1	X	C9	ECCD1H010CC	1pF, 50WV, ±0.25pF, Ceramic	1	Z
COILS and TRANSFORMERS					C119	ECCD1H050CC	5pF, 50WV, ±0.25pF, Ceramic	1	Z
L1	SLAA4W1-3	FM Balun Coil	1	X	C17	ECCD1H070DC	7pF, 50WV, ±0.5pF, Ceramic	1	Z
L2	SLAA4N9	FM Antenna Coil	1	X	C6, 12	ECCD1H100KC	10pF, 50WV, ±10%, Ceramic	2	Z
L3	RLQY15S5	Choke Coil	1	Y	C14	ECCD1H150KC	15pF, 50WV, ±10%, Ceramic	1	Z
L4	SLDA4N18	FM Detector Coil	1	X	C1	ECCD1H180KC	18pF, 50WV, ±10%, Ceramic	1	Z
L5	RLQY15G5	Choke Coil	1	Y	C5	ECCD1H180KS	18pF, 50WV, ±10%, Ceramic	1	Z
L6	SLOA4N9	FM Oscillator Coil	1	X	C132	ECCD1H220KC	22pF, 50WV, ±10%, Ceramic	1	Z
L101, 501	SLQX101-2D	Choke Coil	2	Y	C11	ECCD1H220KR	22pF, 50WV, ±10%, Ceramic	1	Z
L201	SLFA2E21-0	AM Antenna Coil	1	X	C13	ECCD1H390KC	39pF, 50WV, ±10%, Ceramic	1	Z
L301	SLMA123-K	Low Pass Filter	1	X	C405, 406	ECCD1H470KC	47pF, 50WV, ±10%, Ceramic	2	Z
T101	SLIA4D51	FM Discr. Transformer	1	X	C112	ECCD1H560KC	56pF, 50WV, ±10%, Ceramic	1	Z
T102	SLIA4C241	FM Meter IF Transformer	1	X	C108, 111, 117	ECCD1H101K	100pF, 50WV, ±10%, Ceramic	3	Z
T103	SLIA4C242	Muting IF Transformer	1	X	C7	ECCD1H181K	180pF, 50WV, ±10%, Ceramic	1	Z
T201	SLOA2C6	AM Oscillator Coil	1	X	C120, 121	ECQM05102KZ	0.001μF, 50WV, ±10%, Polyester	2	Z
T202	RLI7W10SS-T	AM IF Transformer	1	X	C122, 128	ECQM05103KZ	0.01μF, 50WV, ±10%, Polyester	2	Z
T202 (England)	RLI7W108P-T	AM IFT Transformer (for England)	1	X	C307, 308	ECQM05153JZ	0.015μF, 50WV, ±5%, Polyester	2	Z
T203	RLI2C450	AM IF Transformer	1	X	C309	ECQM05153KZ	0.015μF, 50WV, ±10%, Polyester	1	Z
T501	SLTA5K3	Power Transformer	1	X	C101, 104, 107, 109, 114, 118, 139	ECQM05223KZ	0.022μF, 50WV, ±10%, Polyester	7	Z
T501 (Australia)	SLTA5K4	Power Transformer (for Australia)	1	X	C105	ECQM05393KZ	0.039μF, 50WV, ±10%, Polyester	1	Z
CERAMIC FILTERS					C301	ECQM05473KZ	0.047μF, 50WV, ±10%, Polyester	1	Z
CF101, 102, 103	SVF107MA8A	FM IF Circuit, Red, 10.7 MHz	each 3	X	C302	ECQS1471JZ-K	470pF, 125WV, ±5%, Styrol	1	Z
	SVF107MA8B	FM IF Circuit, Blue, 10.67MHz			C506	ECQU2A103MD	0.01μF, 250VAC, ±20%, Polyester	1	Z
	SVF107MA8C	FM IF Circuit, Orange, 10.73MHz			C208	ECAG25ER1X	0.1μF, 25WV, Electrolytic	1	Y
	SVF107MA8D	FM IF Circuit, Black, 10.64MHz			C304, 305	ECAG25ER33X	0.33μF, 25WV, Electrolytic	2	Y
	SVF107MA8E	FM IF Circuit, White, 10.76MHz			C303	ECAG25ER47X	0.47μF, 25WV, Electrolytic	1	Y
RESISTORS					C403, 404	ECEA6V47L	47μF, 6.3WV, Electrolytic	2	Y
R304	ERD14TJ680	68Ω, 1/4W, ±5%, Carbon	1	Y	C130	ECEA6V100L	100μF, 6.3WV, Electrolytic	1	Y
R105, 106, 109, 114, 123, 201, 301	ERD14TJ101	100Ω, 1/4W, ±5%, Carbon	7	Y	C106	ECEA10V100L	100μF, 10WV, Electrolytic	1	Y
R107, 113	ERD14TJ151	150Ω, 1/4W, ±5%, Carbon	2	Y	C207, 312	ECEA10V220L	220μF, 10WV, Electrolytic	2	Y
R122, 409, 410	ERD14TJ271	270Ω, 1/4W, ±5%, Carbon	3	Y	C306, 504	ECEA10V1000L	1000μF, 10WV, Electrolytic	2	Y
R129, 413, 414	ERD14TJ331	330Ω, 1/4W, ±5%, Carbon	3	Y	C131, 133, 135, 207	ECEA16V10L	10μF, 16WV, Electrolytic	4	Y
R103	ERD14TJ471	470Ω, 1/4W, ±5%, Carbon	1	Y	C501, 502	ECEA16V470L	470μF, 16WV, Electrolytic	2	Y
R108	ERD14TJ681	680Ω, 1/4W, ±5%, Carbon	1	Y	C113, 310, 311, 407, 408	ECEA25V3R3L	3.3μF, 25WV, Electrolytic	5	Y
R101, 104, 110, 115, 116, 118, 119, 303	ERD14TJ102	1kΩ, 1/4W, ±5%, Carbon	8	Y	C110, 127	ECEA25V4R7L	4.7μF, 25WV, Electrolytic	2	Y
R502	ERD14TJ122	1.2kΩ, 1/4W, ±5%, Carbon	1	Y	C503	ECEA25V470L	470μF, 25WV, Electrolytic	1	Y
R202	ERD14TJ182	1.8kΩ, 1/4W, ±5%, Carbon	1	Y	C123, 124, 203, 205, 401, 402	ECEA50V1L	1μF, 50WV, Electrolytic	6	Y
R124	ERD14TJ272	2.7kΩ, 1/4W, ±5%, Carbon	1	Y	VARIABLE CAPACITORS				
R203	ERD14TJ332	3.3kΩ, 1/4W, ±5%, Carbon	1	Y	CV1, 2, 3, 201, 202 (CT1, 2, 201, 202)	ECV5MX25X20G	Tuning Gang, FM & AM (with Trimmer)	1	Y
R130, 131, 411, 412	ERD14TJ392	3.9kΩ, 1/4W, ±5%, Carbon	4	Y	CT3	ECV1ZW06P35	FM OSC Trimmer, 6pF	1	Y
R120, 308, 309, 311, 312	ERD14TJ472	4.7kΩ, 1/4W, ±5%, Carbon	5	Y	COMPONENT COMBINATIONS				
R102, 209, 306, 307	ERD14TJ562	5.6kΩ, 1/4W, ±5%, Carbon	4	Y	Z101	EXAF5DL04C	FM Detector	1	Y
R111, 126, 208	ERD14TJ822	8.2kΩ, 1/4W, ±5%, Carbon	3	Y	Z201	EXAF203Z471	AM Detector	1	Y
R121, 125, 127, 204, 206, 403, 404	ERD14TJ103	10kΩ, 1/4W, ±5%, Carbon	7	Y	Z501	RXAF103P22HD	Power Source	1	Y
R112	ERD14TJ123	12kΩ, 1/4W, ±5%, Carbon	1	Y	FUSES and LIGHTS				
R405, 406	ERD14TJ153	15kΩ, 1/4W, ±5%, Carbon	2	Y	F501	XBA2E015NS5	150mA Fuse, Power Source	1	X
R302	ERD14TJ183	18kΩ, 1/4W, ±5%, Carbon	1	Y	F502	XBAS1B0303	300mA Fuse, Power Source	1	X
R205	ERD14TJ223	22kΩ, 1/4W, ±5%, Carbon	1	Y					

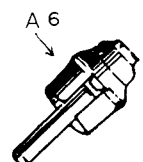
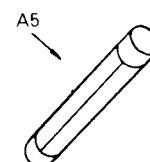
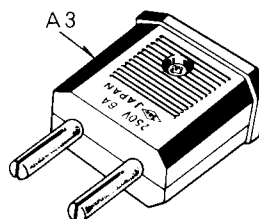
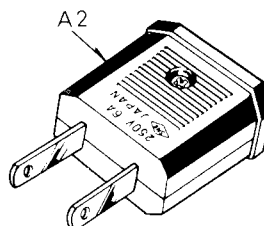
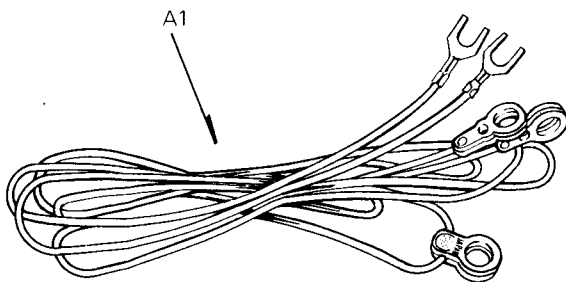
Model ST-3150

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks	Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
PL1, 2 PL3	XAM35W XAMR38S200	Dial Lamp (6.3V 0.25A) Stereo Eye (6.3V 40mA)	2 1	X X	CHASSIS PARTS				
METERS					CH1	XTV3-8C	Screw, Meter Bracket M'tg.	3	Z
					CH2	SDHA55	Bracket, Meter	1	○ Z
					CH3	SDUA7-1	Orange Filter, Stereo Eye	1	Z
					CH4	SHRA916	Lock Pin, Dial Scale & Dial Light Filter	3	Z
					CH5	RNW150-2	Lock Washer, Pulley	4	Z
					CH6	RDR20	Pulley, Dial Cord	3	Z
					CH7	RDY34	Shaft, Pulley (RDR20)	3	Z
					CH8	RDR23	Pulley, Dial Cord	1	Z
						RDY32	Shaft, Pulley (RDR23)	1	Z
					CH9	SKDA520	Scale, Dial	1	○ Z
					CH10	SHGA204	Rubber Cushion, Stereo Eye & Variable Capacitor	2	Z
SWITCHES					CH11	SDPA5-1	Pointer, Dial	1	Y
S1	SSRA72	Selector Switch	1	○ Y	CH12	SDUA8	Green Filter, Dial Light	1	○ Z
S2, 3	SSLA25S	Muting, Hi-Blend Switch	2	Y	CH13	SMMA16	Mounting, Meter	1	○ Z
S4	SSLA27-1S	Power Source Switch	1	Y	CH14	XTV3-6C	Screw, Meter M'tg.	1	Z
S5	SSRA8	Voltage Selector Switch (Not attach for Australia)	1	Y	CH15	SDMA11	Mounting, Dial Scale	1	○ Z
CABINET PARTS					CH16	SDTA8-1S	Tuning Shaft, Complete with Flywheel	1	○ Z
CA1	XTV3-8CK	Black Screw, Panel M'tg.	4	Z	CH17	RJV1A	Holder, Dial Lamp	2	Z
CA2	SGWA1390	Front Panel	1	○ Y	CH18	SDDA391S	Drum, Tuning	1	Z
CA3	SHRA610	Bracket, Lever Switch	3	Z		XXAR3H6S	Screw, Drum M'tg.	2	Z
CA4	SGUA29	Glass Plate	1	○ Y	CH19	SDSA4121	Spring, Dial Cord	1	Y
CA5	SBLA3	Knob, Lever Switch	3	Y	CH20	RDZ05C	Cord, Dial (190cm [74 3/4"])	1 roll	Y
CA6	SBNA123	Knob, Selector Switch	1	○ Y	ACCESSORIES				
CA7	SBNA122S	Knob, Tuning	1	○ Y	A1	SSAA3	Cord, FM Antenna	1	Y
CA8	RHR106	Bushing, AM Antenna Lead Wire	1	Z	A2	RJP16AS	AC Plug	1	Y
CA9	RHR111	Bushing, AC Cord	1	Z	A3	RJP17AS	AC Plug	1	Y
CA9(Australia)	SHR113	Bushing, AC Cord (for Australia)	1	Z	A4	SJP2129	Connector Cord	1	Y
CA10	SJFA4402	Terminal, Ext. Antenna	1	○ Z	PACKING PARTS				
CA11	SJFA3416	Terminal, Output	1	Z	P1	SPPA39	Soft Cover	1	○ Z
CA12	SJAA3-1	AC Cord	1	Y	P2	SPSA31-1	Pad, AM Bar Antenna	1	○ Z
CA12(Australia)	SJA51	AC Cord (for Australia)	1	Y	P3	SPPA28	Polyethylene Bag	1	Z
CA13	SGPA600-1C	Rear Panel	1	○ Z	P4	SPSA137	Pad, Left & Right Side	2	○ Z
CA13(Australia)	SGPA600-2B	Rear Panel (for Australia)	1	○ Z	P5	SPSA36	Pad, Between Inner & Outer Carton	1	Z
CA14	SMA197	Mounting, AM Antenna Coil	1	Z	P6	SPNA340A	Carton Box, Inner	1	○ Z
CA15	SMAA6-2	Band, AM Antenna Coil	1	Z	P7	SPGA601A	Carton Box, Outer	1	○ Z
CA16 (BRN)	SKAA850	Cabinet, Brown Wood	1	○ Y	P8	SQFA244	Printed Matter, Complete	1	○ Y
CA16 (BLK)	SKAA850-1	Cabinet, Black Wood (for Germany)	1	○ Y					
CA17 (BRN)	XSB4-12BVCS	Screw, Brown Cabinet M'tg.	4	Z					
CA17 (BLK)	XSB4-16KS	Screw, Black Cabinet M'tg.	4	Z					
CA18	SYUA111A	Bottom Board, (With Leg)	1	○ Z					
CA19	SHG309	Leg	4	Z					
CA20	XTB4-8BR	Red Screw, Bottom Board M'tg	5	Z					
PACKING PARTS (for Australia)					PACKING PARTS (for Germany & England)				
Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks	Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
P1	SPPA39	Soft Cover	1	Z	P1	SPPA39	Soft Cover	1	Z
P2	SPSA31-1	Pad, AM Bar Antenna	1	Z	P2	SPSA31-1	Pad, AM Bar Antenna	1	Z
P3	SPPA28	Polyethylene Bag	1	Z	P3	SPPA28	Polyethylene Bag	1	Z
P4	SPSA16-2	Pad, Left & Right Side	2	Z	P4	SPSA16-2	Pad, Left & Right Side	2	○ Z
P5	.....	Deletion			P5	.....	Deletion		
P6	.....	Deletion			P6	.....	Deletion		
P7	SPGA501	Carton Box	1	Z	P7	SPG501	Carton Box	1	○ Z
P8	SQF947	Printed Matter, Complete	1	○ Y	P8	SQFA244	Printed Matter, Complete	1	Y

Model ST-3150

Model SU-3150

ACCESSORIES



Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks	Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
TRANSISTORS					CAPACITORS				
TR101, 102	2SA722T	Equalizer Amplifier	2	X	C209, 210	ECCD1H390K	39pF, 50WV, $\pm 10\%$, Ceramic	2	Z
TR103, 104	2SC1328T	Equalizer Amplifier	2	X	C103, 104, 205	ECCD1H680K	68pF, 50WV, $\pm 10\%$, Ceramic	4	Z
TR201, 202, 203, 204	2SA666A-AD3	Differential Amp. (Use in Pairs)	4	X	C117, 118, 211	ECCD1H101K	100pF, 50WV, $\pm 10\%$, Ceramic	6	Z
TR205, 206	2SC1509Q	Driver Amplifier	4	X	C119, 120	ECCD1H221K	220pF, 50WV, $\pm 10\%$, Ceramic	2	Z
TR207, 208		(Use in pairs)			C105, 106	ECKD2H821K	820pF, 500WV, $\pm 10\%$, Ceramic	2	Z
TR209, 210	2SA777Q	Driver Amplifier	2	X	C213, 214	ECKE1H102MD	0.001 μ F, 50WV, $\pm 20\%$, Ceramic	2	Z
TR211, 212	2SC789-70.0	Power Amplifier	2	X	C235	ECKE1H333PF	0.033 μ F, 50WV, $\pm 100\%$, Ceramic	1	Z
TR213, 214	2SA489-70.0	Power Amplifier	2	X	C1	ECQU2A103MD	0.01 μ F, 250VAC, $\pm 20\%$, Polyester	1	Z
TR215, 216	2SC828R	Thermal Compensation	2	X	C111, 112	ECQM05222JZ	0.0022 μ F, 50WV, $\pm 5\%$, Polyester	2	Z
TR301	2SC828A-R	Ripple Filter	1	X	C151, 152	ECQM05272KZ	0.0027 μ F, 50WV, $\pm 10\%$, Polyester	2	Z
TRANSFORMER					C109, 110	ECQM05682JZ	0.0068 μ F, 50WV, $\pm 5\%$, Polyester	2	Z
	SLTA5N18S	Power Transformer	1	○ X	C153, 154	ECQM05103KZ	0.01 μ F, 50WV, $\pm 10\%$, Polyester	2	Z
(Australia)	SLT5N131	Power Trans(Only for Australia)	1	○ X	C219, 220	ECQM05273KZ	0.027 μ F, 50WV, $\pm 10\%$, Polyester	2	Z
DIODES and THERMISTORS					C155, 156	ECQM05333KZ	0.033 μ F, 50WV, $\pm 10\%$, Polyester	2	Z
D201	SVDAEQAO106R	6V Zener, Shock Noise Cancel	1	X	C217, 218	ECQM05473KZ	0.047 μ F, 50WV, $\pm 10\%$, Polyester	2	Z
D202	SVDAEQAO111R	11V Zener, Shock Noise Cancel	1	X	C221, 222	ECQM05334KZ	0.33 μ F, 50WV, $\pm 10\%$, Polyester	4	Z
D301, 302	RVD10DC1	Rectifier	2	X	C101, 102	ECSZ25EF3R3	3.3 μ F, 25WV, Electrolytic	2	Y
D303, 304	RVD10DC1R	Rectifier	2	X	C201, 202	ECAG25ER47S	0.47 μ F, 25WV, Electrolytic	2	Y
D305, 306	MA150	Rectifier	2	X	C107, 108	ECEA6V33	33 μ F, 6.3WV, Electrolytic	2	Y
TH201, 202	RRT251	Thermistor, Driver Circuit	2	X	C122	ECEA6V47	47 μ F, 6.3WV, Electrolytic	1	Y
COMPONENT COMBINATIONS					C113, 114	ECEA6V100	100 μ F, 6.3WV, Electrolytic	4	Y
M301, 302	RXAF103P22HD	0.01 μ F ($\times 2$), 500WV, Hum Canceled	2	Y	C121	ECEA6V220	220 μ F, 6.3WV, Electrolytic	1	Y
RESISTORS					C233	ECEA16V100	100 μ F, 16WV, Electrolytic	1	Y
R245, 246	ERD14TJ390	39 Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	2	Y	C207, 208	ECEA25V33	33 μ F, 25WV, Electrolytic	2	Y
R211, 212	ERD14TJ680	68 Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	2	Y	C307	ECEA25V100	100 μ F, 25WV, Electrolytic	1	Y
R249, 250	ERD14TJ820	82 Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	2	Y	C305, 306	ECEA25V220	220 μ F, 25WV, Electrolytic	2	Y
R243, 244	ERD14TJ101	100 Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	2	Y	C231	ECEA25V1000V	1000 μ F, 25WV, Electrolytic	1	○ Y
R253, 254	ERD14TJ271	270 Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	2	Y	C232	ECEA35V470	470 μ F, 35WV, Electrolytic	1	○ Y
R109, 110, 221	ERD14TJ471	470 Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	5	Y	C229, 230	ECEA35V1000	1000 μ F, 35WV, Electrolytic	4	Y
222, 305					303, 304				
R302	ERD14TJ561	560 Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	1	Y	C234	ECEA50V10	10 μ F, 50WV, Electrolytic	1	Y
R247, 248	ERD14TJ681	680 Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	2	Y	C225, 226, 227	ECEA25V4R7LM	4.7 μ F, 25WV, Electrolytic	4	Y
R225, 226	ERD14TJ821	820 Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	2	Y	C115, 116	ECEA50N1Z	1 μ F, 50WV, Non-Polar Electrolytic	2	Y
R103, 104, 203	ERD14TJ102	1k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	4	Y	C301, 302	ECET35R3300S	3300 μ F, 35WV, Electrolytic	2	○ Y
R115, 116, 125	ERD14TJ122	1.2k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	4	Y	FUSES and LAMP				
R121, 122, 223	ERD14TJ182	1.8k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	4	Y	F1	XBAS2B1501	1.5A Fuse, Power Source	1	X
R117, 118, 151	ERD14TJ472	4.7k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	5	Y	F1 (Australia)	XBA2E08NS5	0.8A Fuse, (Only for Australia)	1	○ X
152, 258					F2, 3	XBAS1A3001	3A Fuse, Circuit Protection	2	X
R3, 4	ERD14TJ562	5.6k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	2	Y	F4	XBA2K08NS5	0.8A Fuse, Power Source	1	○ X
R127, 128	ERD14TJ822	8.2k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	2	Y	PL	XAM37K150	Pilot Lamp, (7.5V 75mA)	1	X
R207, 208	ERD14TJ103	10k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	2	Y	SWITCHES				
R251, 252	ERD14TJ123	12k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	2	Y	S1	SSRA73	Selector Switch	1	○ Y
R124	ERD14TJ223	22k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	1	Y	S2	SSRA74	Tape Monitor Switch	1	○ Y
R111, 112	ERD14TJ333	33k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	2	Y	S3	SSLA24S	Mode Switch	1	X
R153, 154, 304	ERD14TJ393	39k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	3	Y	S4, 5, 6	SSLA23S	Filters & Loudness Switch	3	X
R1, 2, 107, 108	ERD14TJ473	47k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	4	Y	S7	SSRA75	Speakers Switch	1	○ Y
R205, 206	ERD14TJ563	56k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	4	Y	S8	SSLA27-1S	Power Source Switch	1	X
213, 214					S9	SSRA71S	Voltage Selector Switch	1	Y
R119, 120	ERD14TJ823	82k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	2	Y	CABINET PARTS				
R7, 8	ERD14TJ104	100k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	2	Y	CA1	XTV3-8CK	Black Screw, Panel M'tg.	4	Z
R113, 114	ERD14TJ154	150k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	2	Y	CA2	SGWA1400	Front Panel	1	○ Y
R5, 6, 123	ERD14TJ474	470k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	3	Y	CA3	SGLA9	Orange Filter	1	Z
R201, 202	ERD14TJ824	820k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	2	Y	CA4	SHRA601	Bracket, Pilot Lamp	1	Z
R101, 102, 105	ERD14TSJ104	100k Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	4	Y	CA5	SHRA610	Bracket, Lever Switch	5	Z
106					CA6	SBNA124	Knob, Speakers, Volume, Tape Monitor & Selector Switch	4	○ Y
R227, 228, 233	ERD14FJ6R8	6.8 Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	4	Y	CA7	SBLA3	Knob, Lever Switch	5	Y
R215, 216, 229	ERD14FJ470	47 Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	6	Y	CA8	SBNA125	Knob, Bass & Treble Control	2	○ Y
230, 231, 232					CA9	SBNA123	Knob, Balance Control	1	Y
R255, 256, 303	ERD14FJ101	100 Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	3	Y	CA10	SJFA3805	Terminal, Input & Tape Monitor	2	○ Z
R257	ERD14FJ561	560 Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	1	Y	CA11	SJFA3207	Terminal, Pre Out	1	Z
R209, 210	ERD14FJ821	820 Ω , $\frac{1}{4}$ W, $\pm 5\%$, Carbon	2	Y	CA12	SJFA5201-1	Holder, Protection Fuses	1	Z
R217, 218	ERD12TJ561	560 Ω , $\frac{1}{2}$ W, $\pm 5\%$, Carbon	2	Y	CA13	SNEA404	Nut, Ground	1	Z
R239, 240	ERD12TJ681	680 Ω , $\frac{1}{2}$ W, $\pm 5\%$, Carbon	2	Y		SNEA204-2S	Bolt, Ground	1	Z
R219, 220	ERD12TJ332	3.3k Ω , $\frac{1}{2}$ W, $\pm 5\%$, Carbon	2	Y	CA14	SGPA610-1B	Rear Panel Only	1	Z
R301	ERD18FJ4R7	4.7 Ω , $\frac{1}{8}$ W, $\pm 5\%$, Carbon	1	Y	CA14 (Australia)	SGPA610-2A	Rear Panel (Only for Australia)	1	Z
R235, 236, 237	ERX2ANJR47	0.47 Ω , 2W, $\pm 5\%$, Metallic	4	Y	CA15	RJS31-1	DIN Socket, Tape Monitor	1	Z
238					CA16	SJFA4803-1	Terminal, Speakers	1	Z
R241, 242	ERX1ANJ100	10 Ω , 1W, $\pm 5\%$, Metallic	2	Y	CA17	SJSA66-1	Socket, AC Outlet	2	Z
R259, 260	ERG1ANJ331	330 Ω , 1W, $\pm 5\%$, Metallic	2	Y	CA18	RHR111	Bushing, AC Cord	1	Z
VARIABLE RESISTORS					CA18 (Australia)	SHR113	Bushing, AC Cord (Only for Australia)	1	Y
VR1	EWFPXA085BF5	250k Ω (B), Volume Control	1	○ X	CA19	SJAA3-1	AC Cord	1	Y
VR2	EVH6DA038G25	200k Ω (G), Balance Control	1	○ X	CA19 (Australia)	SJA51	AC Cord (Only for Australia)	1	Y
VR3, 4	EWF3NA037C14	10k Ω (C), Tone Control	2	○ X	CA20	SJFA5202-1	Cap. Protection Fuse Holder	1	Z
VR201, 202	EVLS3AA00B23	2k Ω (B), DC Unbalance Adjustment	2	X	CA21	XSN26+12	Screw, Fuse Cap M'tg.	1	Z
VR203, 204	EVLS3AA00B52	500 Ω (B), Ico Adjustment	2	X	CA22 (BRN)	SKAA840	Cabinet, Brown Wood	1	○ Y

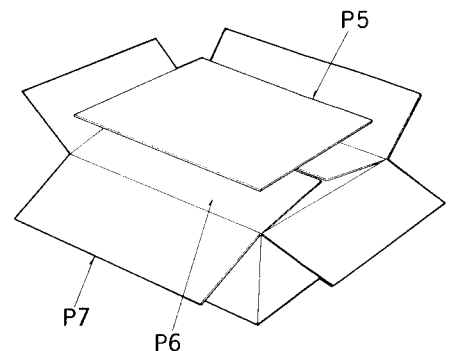
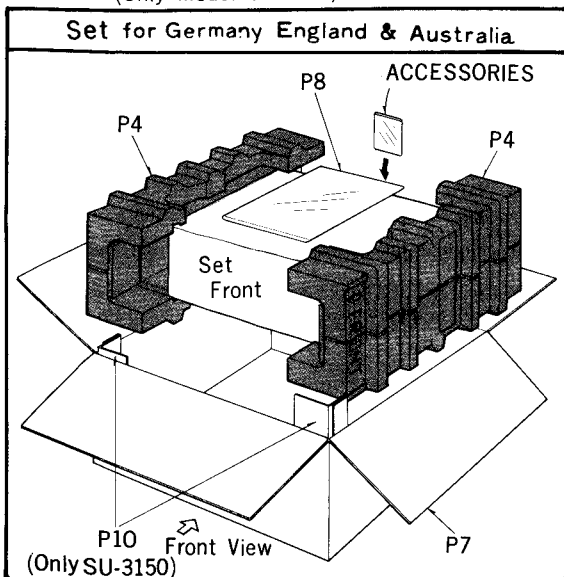
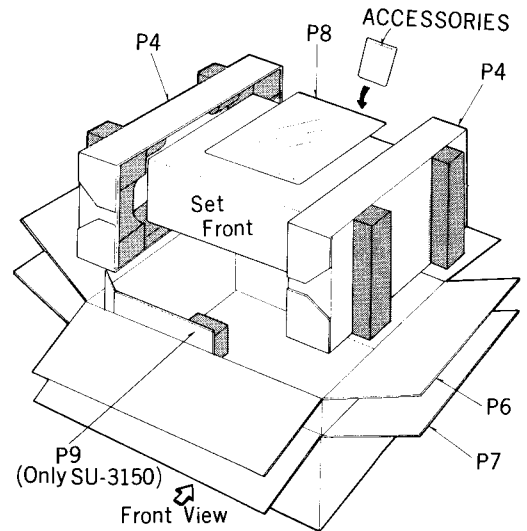
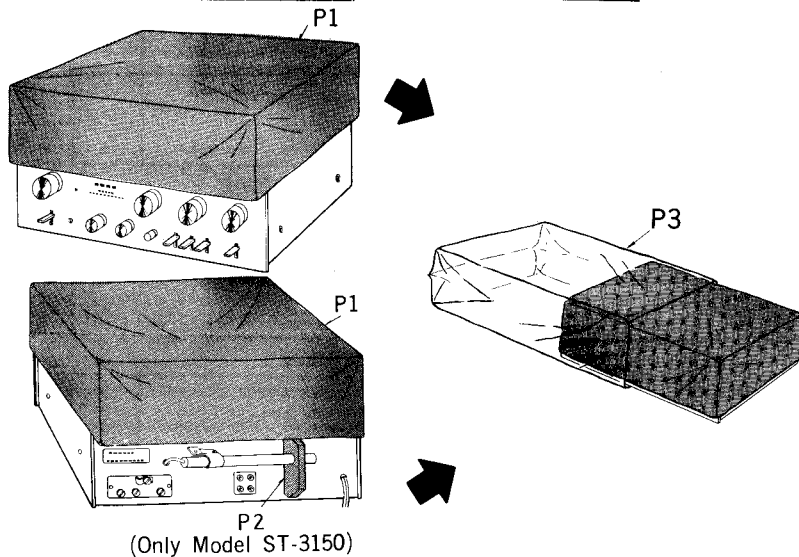
Model SU-3150

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks	Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
CA22(BLK)	SKAA840-1	Cabinet, Black Wood (for Germany)	1	○ Y	ACCESSORIES				
CA23(BRN)	XSB4+25FVCS	Screw, Brown Cabinet M'tg.	4	Z	A2	RJP16AS	AC Plug(Nothing, for Australia)	1	Y
CA23(BLK)	XSB4+16KS	Screw, Black Cabinet M'tg.	4	Z	A3	RJP17AS	AC Plug(Nothing, for Australia)	1	Y
CA24	SYUA112A	Bottom Board (with Leg)	1	Z	A5	XBAS1A3001	Circuit Protection Fuse, 3A	2	X
CA25	SHG309	Leg Only	4	Z	A6	RJP5	Pin Plug(Nothing, for Australia)	4	Y
CA26	XTB4+8BR	Red Screw, Bottom Board M'tg.	4	Z	PACKING PARTS				
CA27	SJPA11	Short Pin, PHONO 2 Accessory	2	○ Y	P1	SPPA39	Soft Cover	1	Z
CHASSIS PARTS					P3	SPPA28	Polyethylene Bag	1	Z
CH1	SJJA15	Jack Headphones	1	○ Z	P4	SPSA137	Pad, Left & Right	2	Z
CH2	SMZA6091	Rubber Bracket, Pilot Lamp	1	Z	P5	SPSA36	Pad, Carton Box	1	Z
CH3	SJFA2	Holder, Fuse	1	Z	P6	SPNA350A	Carton Box, Inner	1	○ Z
CH4	SUV295	Cap. Fuse Holder	1	Y	P7	SPGA611A	Carton Box, Outer	1	○ Z
CH5	XUC5FZ	E-Ring	4	Y	P8	SQFA243	Printed Matter, Complete	1	○ Y
CH6	SUBA21S	Coupler, Switch & Coupling Rod	2	Z	P9	SPS41	Pad	1	○ Z
CH7	XXAR3H6S	Screw, Coupler M'tg.	6	Z	PACKING PARTS (for Australia)				
CH8	SUBA22	Coupling Rod, Selector & Tape Monitor Switch	2	○ Z	P1	SPPA39	Soft Cover	1	Z
PACKING PARTS (for Germany & England)					P3	SPPA28	Polyethylene Bag	1	Z
P1	SPPA39	Soft Cover	1	Z	P4	SPSA16-2	Pad, Left & Right	2	Z
P3	SPPA28	Polyethylene Bag	1	Z	P5	Deletion	Deletion	.....	.....
P4	SPSA16-2	Pad, Left & Right	2	Z	P6	Deletion	Deletion	.....	.....
P5	.....	Deletion	.....	.....	P7	SPG503	Carton Box	1	○ Z
P6	.....	Deletion	.....	.....	P8	SQFA243	Printed Matter, Complete	1	Y
P7	SPG503	Carton Box, Outer	1	Z	P9	Deletion	Deletion	.....	.....
P8	SQF945	Printed Matter, Complete	1	○ Y	P10	SPS39	Pad, Carton Box Corner	2	○ Z
P9	Deletion	Deletion	.....	.....					
P10	SPS39	Pad, Carton Box Corner	2	Z					

Model ST-3150

Model SU-3150

PACKING PARTS



Service Manual

FM/AM Stereo Tuner

SU-3500/ST-3500

(XGB), (XGS) (XGB), (XGS)

Supplementary

For additional information, please refer to the service manual for Model SU-3500 (ORDER NO. AD7303-070) and ST-3500 (ORDER NO. AD7405-071).

Notes: * This service manual supplementary includes only the changes of **SU-3500** (ORDER NO. AD7303-070) and **ST-3500** (ORDER NO. AD7405-071).

* When servicing model **SU-3500(XGB), (XGS)** and model **ST-3500(XGB), (XGS)**, this service manual supplementary and **SU-3500** (ORDER NO. AD7303-070) and **ST-3500** (ORDER NO. AD7405-071) service manual should be used together.

CHANGES SU-3500 (XGB), (XGS)

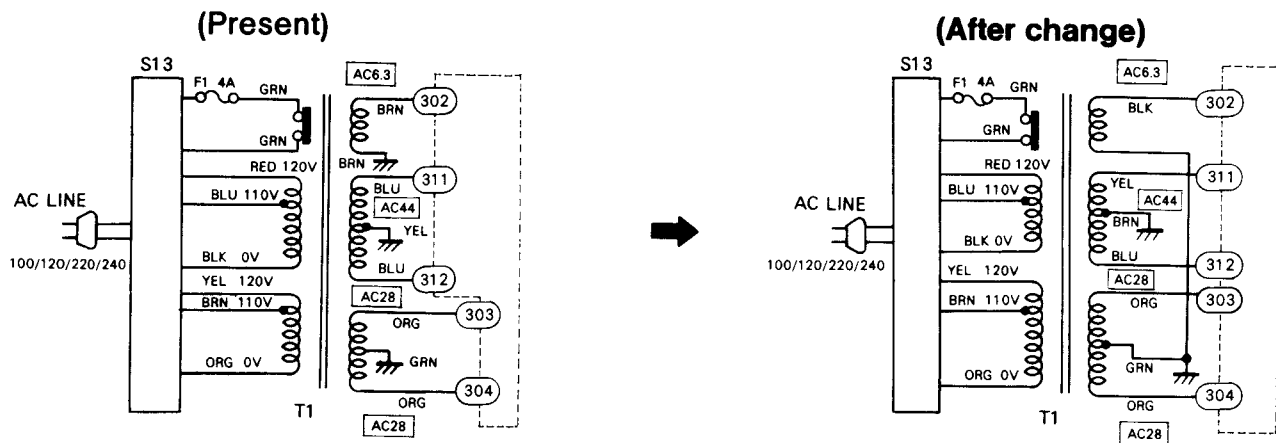
REPLACEMENT PARTS LIST

Ref. No.	Change of Parts No.		Description	Per Set (Pcs.)	Remarks
	SU-3500	→ SU-3500 ^(XGB) (XGS)			
TR101 ~ 104	2SA722T	2SA902S-F	Equalizer Amplifier	4	
TR201(x2), 202(x2)	2SA722T	2SA902-F	Tone Amplifier	4	
T1	SLTA5Q24S	SLTA5Q27S	Power Transformer	1	
R502, 503	ERD18FJ2R2	ERQ12HJ2R2	2.2Ω, 1/2 W, ±5%, Fuse Type Metallic	2	
R329, 330	Addition	ERD25TJ105	1MΩ, 1/4 W, ±5%, Carbon	2	
R331	Addition	ERD25TJ562	5.6kΩ, 1/4 W, ±5%, Carbon	1	
C522, 524	ECEA25V47	ECEA25V10	10μF, 25 WV, Electrolytic	2	
C528	ECEA25V100	ECEA25V10	10μF, 25 WV, Electrolytic	1	
C502	ECEA63V47L	ECEA63V100V	100μF, 63 WV, Electrolytic	1	
F1	XBAS2A4001	XBA2E40NS5	Fuse, 4 A, Power Source	1	
F4	XBAS2B2002	XBA2K20NS5	Fuse, 2 A, Power Source	1	
	SSYA1	SSY13	Relay, Power Source Circuit	1	
S12	SSLA20S	SSLA27-1S	Switch, Power Source	1	
for [XGB] only	SYWA160A	SYWA162A	Black Panel, Front, Only Set for [XGB]	1	
CA35	SJFA107	QTF1046	Holder, Circuit Protection Fuse	1	
CA37	SJFA1	QTF1046	Holder, Power Source Fuse	1	
CA38	SJAA3	SJAA3-1	AC Cord	1	
CA40	SJPA9201	SJP9205	Short Pin, Pre & Main Amplifier	2	
CA41	SJP9103	SJPA11	Short Pin Plug, PHONO-2 Terminal	2	
CH3	SJJA14	SJJA14-1	Jack, Headphones	1	
P3	SPSA73	Deletion	-----	0	
P4	SPSA70	Deletion	-----	0	

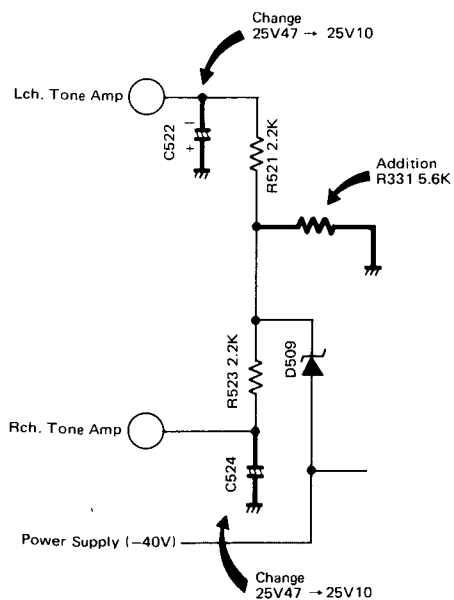
Ref. No.	Change of Parts No.		Description	Per Set (Pcs.)	Remarks
	SU-3500	→ SU-3500(XGB) (XGS)			
P5	SPNA230A	Deletion	-----	0	
P6	SPSA30	Deletion	-----	0	
P7	SPGA440A	SPG815	Carton Box, Outer	1	○
P10	Addition	SPS475	Pad, Outside	1	
P11	Addition	SPS579	Pad, Inside	1	○
P12	Addition	SPS473	Pad, Lower	1	

■ CHANGE OF SCHEMATIC DIAGRAMS

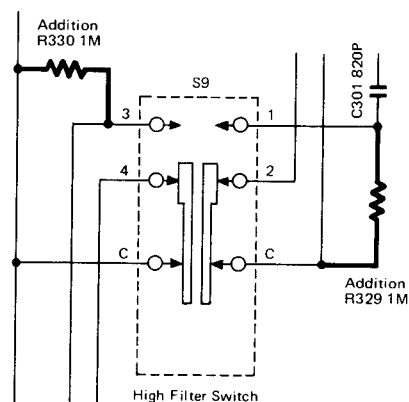
• Power Supply



• Tone Amp Power Supply



• High Filter Switch



CHANGES

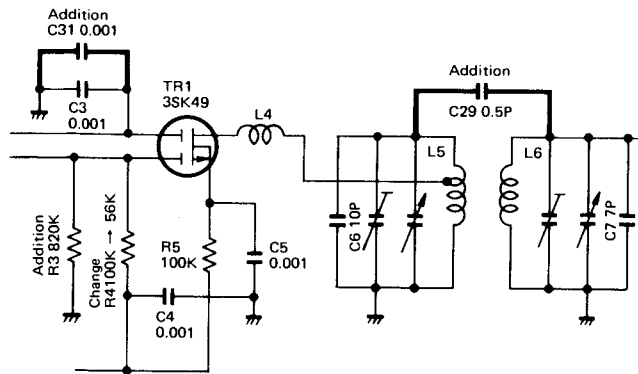
ST-3500 (XGB), (XGS)

■ REPLACEMENT PARTS LIST

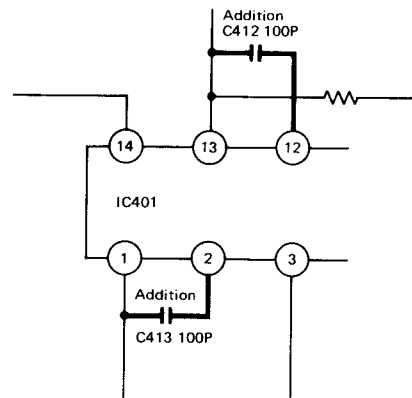
Ref. No.	Change of Parts No.		Description	Per Set (Pcs.)	Remarks
	ST-3500	→ ST-3500 (XGB) (XGS)			
D106, 107	OA99	MA150	Diode, AGC	2	
L201	RLM1X2-D	ELQ393D599G	Choke Coil	1	
R19	ERD14TJ102	ERD25TJ821	820Ω, 1/4 W, ± 5%, Carbon	1	
R15	ERD14VJ103	ERD25TJ104	100 kΩ, 1/4 W, ± 5%, Carbon	1	
R16	ERD14VJ153	ERD25TJ222	2.2 kΩ, 1/4 W, ± 5%, Carbon	1	
R4	ERD14TJ104	ERD25TJ563	56 kΩ, 1/4 W, ± 5%, Carbon	1	
R17	ERD14VJ274	ERD25TJ153	15 kΩ, 1/4 W, ± 5%, Carbon	1	
R3	Addition	ERD25TJ824	820 kΩ, 1/4 W, ± 5%, Carbon	1	
C13	ECCD1H070DC	ECCD1H050CC	5 pF, 50 WV, ± 0.25 pF, Ceramic	1	
C29	Addition	ECCD1H0R5CC	0.5 pF, 50 WV, ± 0.25 pF, Ceramic	1	
C151	ECCD1H390KC	ECCD1H101K	100 pF, 50 WV, ± 10%, Ceramic	1	
C30, 31	Addition	ECKD1H102PF	0.001 μF, 50 WV, ± 100% ₀ , Ceramic	2	
C18	ECKD1H102PF	ECCD1H150KC	15 pF, 50 WV, ± 10%, Ceramic	1	
C163, 164	ECKD1H222MD	ECKD1H102PF	0.001 μF, 50 WV, ± 100% ₀ , Ceramic	2	
C171	ECKD1H223PF	Deletion	-----	0	
C412, 413	Addition	ECCD1H101K	100 pF, 50 WV, ± 10%, Ceramic	2	
C407, 408	ECQG05332KZN	ECQM05102KZN	0.001 μF, 50 WV, ± 10%, Polyester	2	
S3	SSLA26S	SSLA26-1S	Delay Time Switch	1	
S4	SSLA25S	SSLA25-1S	MPX Hi-Blend Switch	1	
F1	XBAS1B0302	XBA1E03NR5	Fuse, 0.3 A	1	
F2	XBAS1B0502	XBA1K05NS5	Fuse, 500 mA	1	
for [XGB] only	SYWT3500X1	SYWT3500X2	Black Panel, Front Only Set for [XGB]	1	○
CA21	SHGA925	Deletion	-----	0	
CH3	SSMA26-1	SSMA26-2	Meter, FM Tuning	1	
CH4	SSMA25-1	SSMA25-2	Meter, Signal	1	
CH6	SUMA8	SUMA8-2	Mounting, Dial Scale	1	
CH18	RDZ05-5	RDZ05C	Cord, Dial	1 roll	
P2	SPSA31	SPSA31-1	Pad, AM Bar Antenna	1	
P3	SPP163	SPHA2	Polyethylene Sheet	1	
P4	SPSA73	Deletion	-----	0	
P5	SPSA70	Deletion	-----	0	
P6	SPNA250A	Deletion	-----	0	
P7	SPSA30	Deletion	-----	0	
P8	SPGA490A	SPG817	Carton Box, Outer	1	○
P10	Addition	SPS475	Pad, Outside	1	
P11	Addition	SPS579	Pad, Inside	1	
P12	Addition	SPS473	Pad, Lower	1	

■ CHANGE OF SCHEMATIC DIAGRAMS (Addition & Deletion Parts)

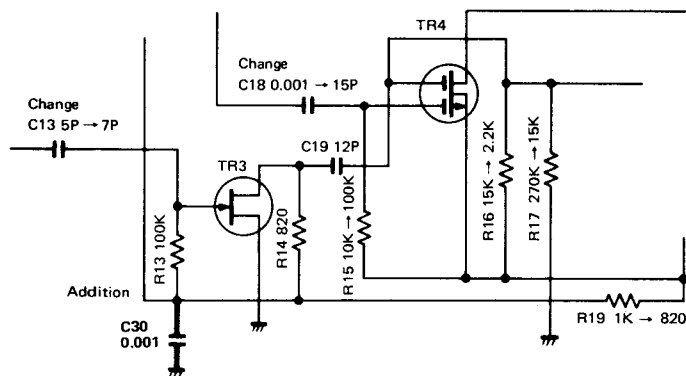
• FM RF Amplifier Circuit



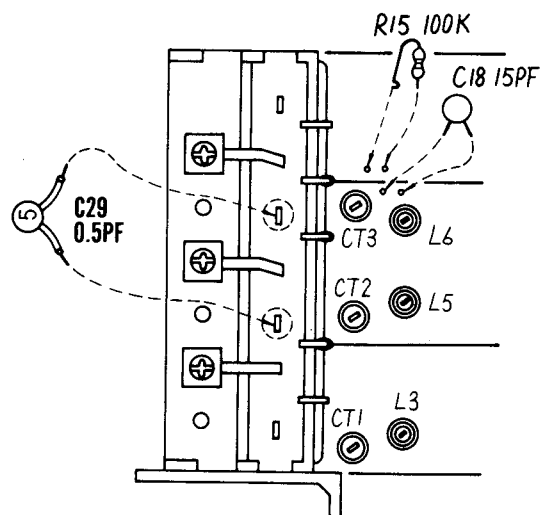
• AF Amplifier Circuit



• FM Mixer Circuit



• FM RF Amplifier p.c.b. Top View



■ CHANGE OF PACKINGS.....SU-3500/ST-3500

